NEW YORK INSTITUTE OF TECHNOLOGY

NYIT MEM Self-Study

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Background

The NYIT Master of Energy Management (MEM) Program self-study provides a comprehensive overview of the curriculum structure, admissions requirements, resources, faculty performance, and employment outcomes. While the report highlights positive aspects, a critical analysis reveals areas of concern and limitations. These include the lack of emphasis on certain program learning outcomes, the need for meaningful inclusion of Equity, Diversity and Inclusion (EDI) course material, overreliance on summative assessments, the challenge of the lack of continuity in Teaching Assistance (TA) positions, and the arrival of generative Artificial Intelligence (AI). By addressing these concerns head-on, the MEM program aims to enhance its curriculum, foster inclusivity, improve assessment practices, build competency, and responsibly integrate AI tools. Through collaborative efforts and continuous improvement, the program strives to provide a high-quality educational experience that prepares students for the evolving energy management field.

This self-study is a comprehensive review of the MEM program that is conducted internally by the program's core faculty and staff. The intent of the MEM Self-Study is to evaluate the effectiveness of the program, identify areas for improvement, and establish a plan for continuous improvement. During the self-study, program faculty and staff reviewed the program's goals, objectives, and outcomes, as well as the curriculum, faculty, student services, and other aspects of the program. Periodic self-studies are required both by NYIT across all campuses and locally in British Columbia by Degree Quality Assessment Board (DQAB). See Appendix A for specific DQAB requirements. The MEM self-study process involved the collection and analysis of data, as defined by institutional KPI such as student performance, satisfaction surveys, and employment outcomes (see Appendix B for details of existing available NYIT Vancouver KPI). Based on the results of the MEM self-study, the program will make adjustments to improve the program's quality and better align it with the needs of its students and industry.

NYIT Energy Management: Masters of Energy Management (MEM) Program

General Overview: NYIT MEM Curriculum Structure

The MEM curriculum is comprised of 30 credits and is divided into two (2) groups: a required fundamental core of seven (7) courses and three (3) contextualized and applications-oriented elective courses, as shown in Table 1. Each course is three (3) credit hours. Additionally,

international students must take a 0 credit-hour Technical Communications course for a total of 30 credits.

- Elective courses can be taken as a combination of technical Energy Management related courses at both the Vancouver and New York campuses, as well as M.B.A. courses, giving students the ability to tailor their studies.
- The degree offers an applied curriculum with a strong emphasis on student projects. Students are expected to develop their technical skills via term projects and by completing a capstone practicum project.

Intakes & Duration: There are three (3) terms in every academic year. MEM is a five (5) term program, but ambitious students accelerate their studies and complete the program in three (3) terms. The 3 elective courses can be chosen from a combination of technical Energy Management related courses as well as M.B.A. courses. Students also have the option to transfer courses between New York and Vancouver campuses. However, in terms of curriculum mapping, M.B.A courses are not included in this study and can be referred to in a future M.B.A. Self-Study. Similarly, MEM courses offered at the New York campus are outside the scope of this study. Table 1 shows courses available at NYIT MEM Vancouver. Core courses are offered throughout an annual 3-semester curriculum whereas elective courses are offered on availability; electives are offered periodically, on an as-requested basis. However, course enrollment must typically be above 7-8 students in any given course, with caps set at 30-35 students. There is no guarantee that any elective is offered during any given semester.

Table 1: Core and Available Elective courses offered at NYIT MEM Vancouver

Course List
Core Courses
ENGY 610 Energy Management
ENGY 670 Energy Technology in Perspective
ENGY 695 Systems Engineering and Management
ENGY 710 Power Plant Systems
ENGY 775 Alternating Energy Systems
ENVT 601 Introduction to Environmental Technology
ENGY 890 Thesis, Practicum, or Other Research
ESLI 593 Technical Communications (0 credits)
Elective Courses
ENGY 615 Energy Equipment Assessment
ENVT 660 Waste to Energy
ENGY 660 Environmental Policy Seminar
ENVT 680 Climate Change Technology
ENGY 690 Energy Policy, Economics and Technology
ENGY 715 Energy Efficient Lighting
ENGY 718 High-Performance Building Envelopes
ENGY 725 Seminar in New Products and Technology
ENVT 725 Sustainability and Environment
ENGY 730 Computer Applications for Energy Management
ENGY 740 Solar Energy Technology
ENGY 745 Advanced Battery and Fuel Cell Technologies
ENVT 750 Environmental Risk Assessment
ENGY 785 Systems Adaptability & Resiliency Planning
ENGY 795 Smart Grid Systems
ENGY 820 Automated Building Energy Control Systems
ENGY 830 Internship Program

Students appreciate the flexibility of the program, both in terms of the timing of courses and the variety of elective courses available during their Master's degree. This flexibility is a defining feature

of the MEM program and differentiates itself from other Post Graduate programs in the lower mainland.

Admissions Requirements

Admissions requirements are reviewed periodically. The minimum entrance GPA has been raised from 2.85/4.0 to a 3.0/4.0 scale for students starting in Fall 2023. This change was made across all NYIT-Vancouver degrees at the request of DQAB. The minimum IELTS score was also increased from 6.0 to 6.5. Should students not meet the English requirements, they are directed to other institutions to improve their language through an English pathway program. Even before increasing these entrance requirements, our students have succeeded well in the program with a low number of students on probation (<5% in May 2023), and very high retention and graduation rates, having an attrition rate of only 1%.

Self-Study: Curriculum Mapping

A key component of the MEM self-study is a program-level mapping to ensure that students attain learning outcomes, as defined by the institutional mandate of the program. This interim report discusses the methods and preliminary results of the curriculum mapping with the intent to generate feedback both internally with the MEM program and externally with the MEM Industry Advisory Board.

Regarding student expectations, NYIT MEM strives to deliver on its mission to prepare students for a career in energy management. Fulfilling our mission requires dedication and attention to the **program-level outcomes** of our curriculum. Understanding, measuring and evaluating program-level outcomes is the purpose of this analysis and report.

Methodology

The general approach to program mapping involves identifying Program Learning Outcomes and matching them to Course Learning Outcomes. The Program Level outcomes should be specific and measurable and should align with both the university's broad mission (shown in Appendix C: NYIT Mission and Academic Goals) and the Program-level specific mission as outlined below.

NYIT MEM Mission Statement

"*The Master of Energy Management (MEM) at New York Institute of Technology - Vancouver provides students with the requisite skills they need to help address global energy-related challenges, becoming energy management leaders. Students graduate ready to apply innovative energy technologies, policies, and management methodologies to help corporations, governments, and organizations meet their climate change commitments. The MEM program is designed to be congruent with B.C.'s energy policies, while also providing students a national and international perspective.*"

The Program level outcomes are designed to fulfill the mission by providing a career-oriented professional education focusing on technology, offering access to all qualified students, and supporting application-oriented research that benefits the larger world. To attain the NYIT mission, a set of six Program Learning Outcomes are defined. The methodology for program mapping is well established and details can be found in the Reference section. In summary, the main steps are:

1. Conduct a curriculum review: Review the existing curriculum to determine if it aligns with the program learning outcomes. Evaluate each course in the program and identify which outcomes are addressed in each course. This step identifies any gaps in the curriculum.
2. Create a curriculum map: Once the curriculum review is complete, create a curriculum map that shows the alignment between the program learning outcomes and the courses in the curriculum. This will help to identify which outcomes are addressed in which courses and where there may be gaps in coverage.
3. Review and revise the curriculum: Use the curriculum map to identify any gaps in the curriculum and make revisions as necessary to ensure that all program learning outcomes are adequately addressed.
4. Implement and monitor: Implement the revised curriculum and monitor student performance to ensure they achieve the program learning outcomes. Regularly review and revise the curriculum as needed to ensure that it remains aligned with the program goals and mission.

An additional opportunity for program mapping is to examine the level of integration of Equity, Diversity, and Inclusion (EDI) throughout the curriculum which has long been a requirement by NYIT, and additionally a review of pathways of inclusion for Indigenous issues, which is now a requirement by the BC Government. See Appendix D for more detail.

While this analysis is a snapshot of the current state of the NYIT MEM program, the long-term goal of any program mapping is continuous improvement. This involves faculty and student engagement

in continuous improvement by regularly reviewing and updating the program learning outcomes, curriculum, and curriculum mapping process to ensure that the program remains relevant and effective.

Program mapping

To support the program mapping, an interactive spreadsheet was developed to gain data and feedback from both Adjuncts and Core MEM faculty which includes:

A. Program-level outcomes are defined, identifying what students are expected to achieve upon completion of the program.
B. Course-level outcomes were extracted from existing syllabi, and student learning attainments for each individual course were evaluated.
(a) A depth measure for the level of attainment as defined by introduced, reinforced, or mastered.
(b) Assessment methods are specified, such as exams, assignments, or projects.

Finally, the resulting mapping is used to review and evaluate the program, identifying areas for improvement. The MEM program can be adjusted based on this analysis to better align with the intended outcomes.

Analysis

The first step was to overhaul the set of original Program Learning Outcomes (PLOs) which had been imported from the original Master of Science in Energy Management program, as offered at the New York NYIT campus. In October 2022, a working set of prototype PLOs were developed to improve alignment with NYIT Vancouver's mission statement. The prototype set of PLOs was used to seed early iterations of the curriculum mapping exercise and was then improved again after a meeting with NYIT MEM Industry Advisory Board. The Industry Advisory Board proposed new technologies for decarbonization, low-carbon fuels, building performance, emerging national codes & standards and projects that include Indigenous reconciliation. Table 2 shows the final set of PLOs, developed in March 2023. A key outcome of the exercise was the identification of a new EDI PLO, which was added to improve alignment with both the Reconciliation Guidelines stipulated by the federal government and Gender-Based Analysis Plus (GBA+) requirements by the BC Government (see Appendix D)

Table 2: Prototype and final PLOs developed by NYIT MEM core faculty, including additions from the NYIT MEM Industry Advisory Board

Program Learning Outcomes *Upon graduation, students are expected to:* *Understand and describe,* *Assess, and* *Recommend solutions* *of the following six inter-related areas associated with energy management:*
PLO1: Environmental issues at multiple scales and situate these in the context of energy management and human manipulation of ecosystems.
PLO2: Impact of climate change and its associated mitigation and adaptation policies will have on different energy systems.
PLO3: Core concepts of project management, business management, assets management, risk assessment/management and operation management
PLO4: Socio-economic impact of implementing different solutions, and of doing nothing
PLO5: Energy projects, technologies, and services; including technical risk and their energy savings and life cycle impacts
PLO6: Social and political considerations of policies and solutions taking into consideration equity, diversity and inclusion as well as Indigenous perspectives in Canada

The development of the new set of PLOs was also influenced by CLOs extracted from course syllabi. Upon analyzing the 17 course syllabi, it was discovered that the learning outcomes concentrated on risk assessment and technical risk. Therefore, the PLOs were adjusted to indicate that the program's courses cover different areas of risk management.

Assessment Methods

To cultivate the skills essential for an Energy Management career, students must be capable of employing their knowledge in practical learning and evaluation exercises. Given the diversity in students' abilities, backgrounds, interests, and learning styles, the NYIT MEM program utilizes

various assessment methods to ensure a fair platform for all students to showcase their knowledge and capabilities. Broadly, assessment methods can be classified into their role for diagnostic, formative and summative outcomes.

- Diagnostic assessments to identify areas of strength and weakness, including knowledge gaps or preexisting knowledge frameworks. Many NYIT MEM students have had previous experience in careers at a professional level (e.g. Engineering, Architecture, Environmental careers) and carry many relevant skills at the project level.
- Formative assessment is seen as an ongoing process that takes place throughout the learning cycle in MEM courses. It is used to inform instructional decisions, identify areas of weakness, and promote student engagement and motivation.
- Summative assessment evaluates student achievement at the end of a learning cycle or unit of study. At NYIT EM, it is typically used to assign grades or determine student mastery of specific skills or content.

To evaluate NYIT MEM assessment approaches and methods, the curriculum map design included reviewing key performance indicators for each PLO. As each CLO is entered and mapped into a PLO, a ‘Depth of Learning Outcome’ and a ‘Primary Assessment Method’ was recorded. The Depth of Learning refers to how deeply the CLO was attained. The options are ‘Introduced’, ‘Reinforced’ and ‘Mastered’.

> 'Introduced' - Students are introduced to the outcome. The intent is for students to gain familiarity with any given concept.
>
> 'Reinforced' - The outcome is reinforced, and students are given opportunities to practice, including activities such as discussions and interactive workshops. This includes inviting external guest speakers to reinforce a practitioner's view of MEM challenges and opportunities.
>
> 'Mastered' - Students have had sufficient practice and can demonstrate mastery at the degree exit level. Students must demonstrate competence via assessed tasks such as written reports, examinations, and oral defence.

Considering the diverse abilities, backgrounds, interests, and learning styles of our students, various assessment approaches are provided to create an equal opportunity for all students to showcase their knowledge and competencies. Table 3 shows the type and role of primary learning assessment methods across the MEM program. It should be noted that preliminary diagnostic evaluation also occurs at the beginning of most MEM courses where an instructor asks students about previous experiences and backgrounds. This step helps to calibrate expectations prior to delivering a course and helps instructors to identify knowledge gaps before the course starts.

Nonetheless, there remains an open question about the potential overreliance on summative methods and the paucity of formal diagnostic tools.

Table 3: Role of Primary Assessment Methods Deployed at NYIT MEM

Primary Assessment Methods	Diagnostic	Formative	Summative
Exam/Quiz	✓		
Written Report		✓	✓
Oral Presentation		✓	✓
Video Production			✓
Laboratory/Device Prototype		✓	✓
Energy/System Model		✓	✓
Homework Assignment	✓	✓	

To collect information on all courses, the study requested both core faculty and adjuncts to provide their CLOs and, wherever possible, to specify the Depth of Knowledge outcomes and Primary Assessment methods. While complete data were obtained for core courses, there were gaps in the data for adjunct-taught courses as some adjuncts were unavailable within the study's timeframe. As a work-around, the study transcribed the necessary data directly from the Master syllabus for those specific courses.

The number of CLOs which align with a specific PLO is shown in Figure 1.

Observation (1): The highest density of CLOs was found to be in 'PLO5: Energy projects, technologies, and services; including technical risk and their energy savings and life cycle impacts.' This is an expected finding due to the technical focus of the MEM program.

Observation (2): The density of CLOs as observed in 'PLO6: Social and political considerations of policies and solutions taking into consideration equity, diversity and inclusion as well as Indigenous perspectives in Canada' is low but increasing. The depth and variety of EDI content is improving when compared to the original PLOs, as inherited from the original program PLOs from the New York campus. The increasing level of EDI shows that the process of aligning EDI with the BC Government mandate is well underway.

Observation (3): An unexpected finding was the relatively low level of CLOs which serve 'PLO2: Impact of climate change and its associated mitigation and adaptation policies will have on different energy systems.' However, the creation of a new course, ENGY 785 Systems Adaptability and

Resiliency Planning allows students a pathway to explore adaptability and resiliency planning for future climate change.

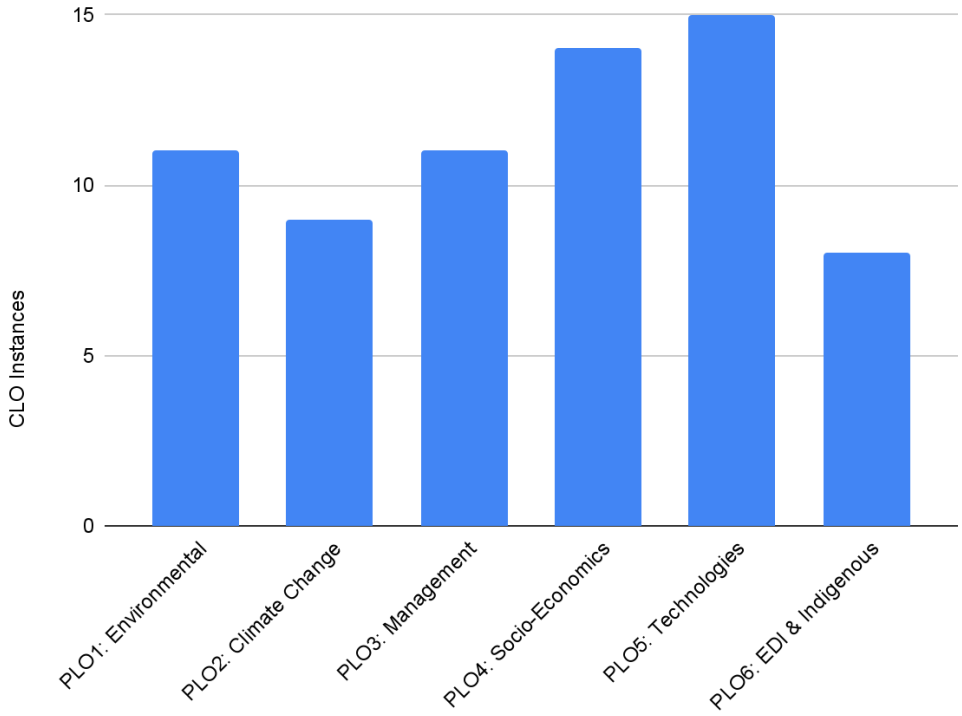

Figure 1: Program Learning Outcomes - Supportive CLO Instances. Data Source: Curriculum Map - CLO density reports

The distribution of Depth of Knowledge attainment is shown in Figure 2. Knowledge levels 'Reinforced' and 'Mastered' is dominant across our curriculum. In contrast, 'Introduced' is reported for PLO6 where most EDI and Indigenous issues are considered, and mastery is not expected. This is due to two reasons; firstly, our students must focus on technical mastery to successfully graduate and integrate with British Columbia's workforce, and secondly, mastering a technical skill can be easily defined whereas claiming "mastery" when it comes to applying EDI and indigenizing within the energy management field would be premature as the field is complex and evolving rapidly. However, guidance on both EDI and Indigenization is improving rapidly. NYIT has an Indigenization Committee and has generated a guidance document which all faculty are expected to review and follow. All students are expected to graduate with literacy in EDI and Indigenous issues and understand both the historical and contextual issues that they must respect as

practitioners throughout their careers.

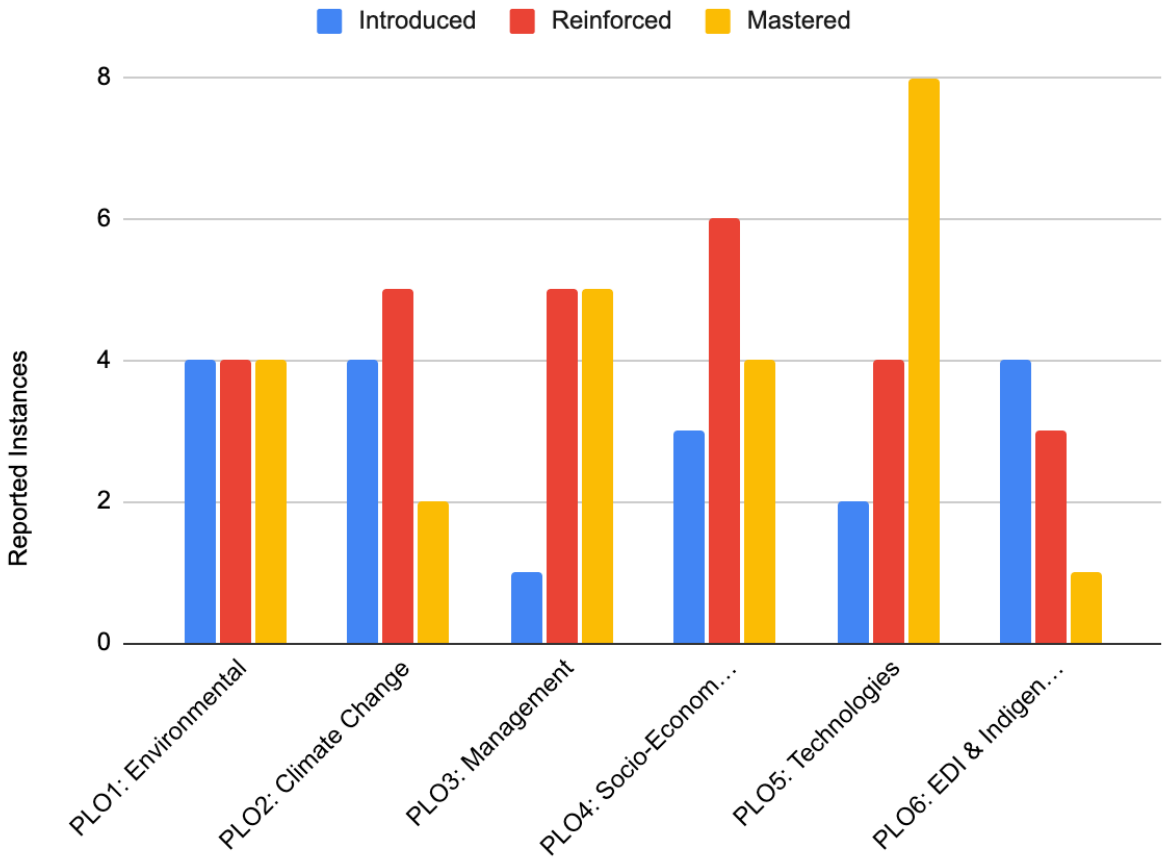

Figure 2: Depth of Learning Outcomes: MEM Curriculum. Data Source: Curriculum Map - CLO outcome knowledge attainment

Primary Assessment methods were evaluated and aggregated across the entire MEM curriculum. The assessment methods were found to focus on Formative and Summative approaches. Figure 3 reveals that report writing and oral presentation assessments are popular across a spectrum of MEM courses. These are formative in the sense that students are expected to showcase interim deliverables and present on topics throughout their courses. Summative methods are also a defining feature of our assessments, particularly in core courses. Final exams and final reports are required to prove that students have mastered MEM subject matter both at an academic and professional level.

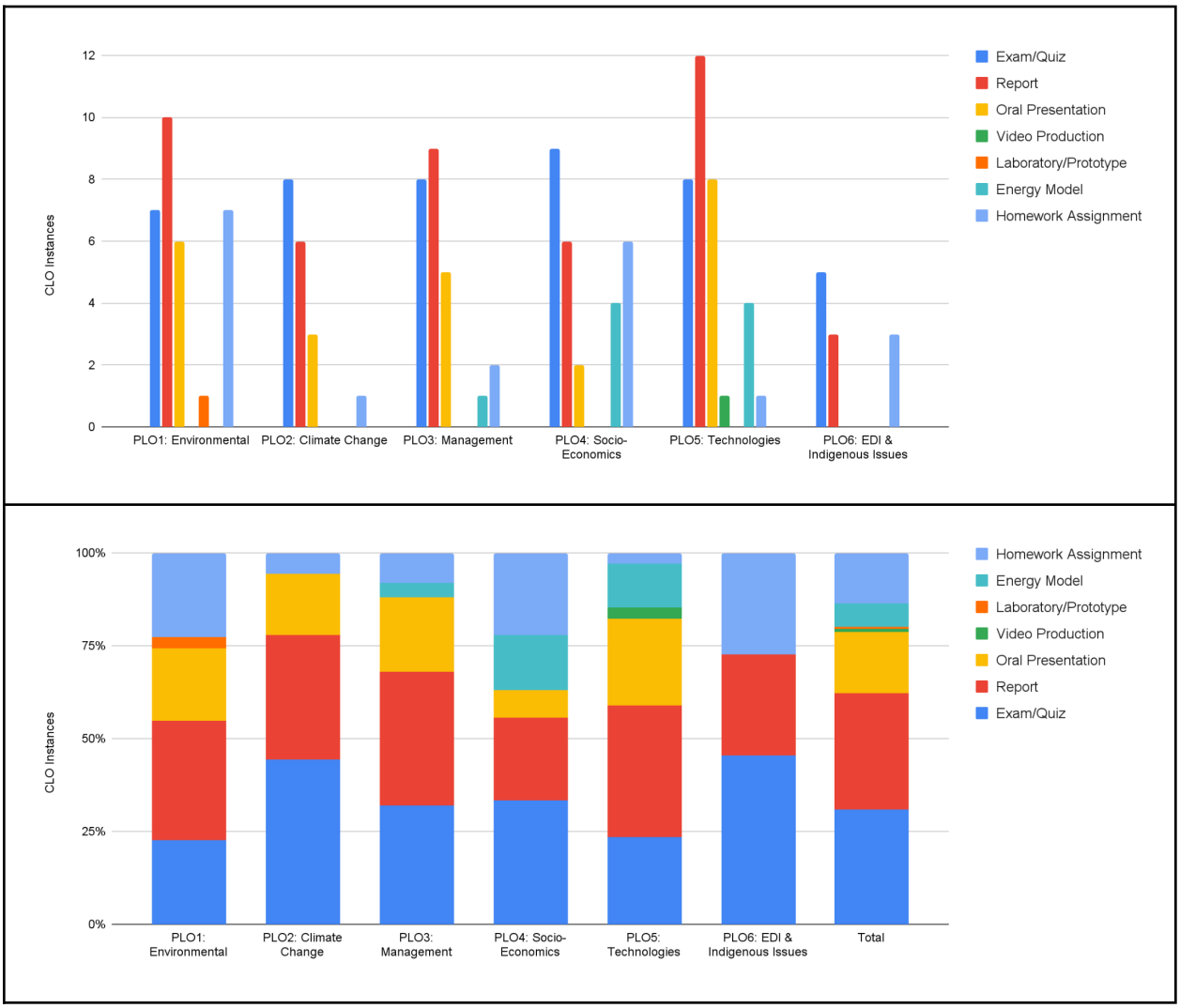

Figure 3: Primary Assessment Methods: MEM Curriculum. Data Source: Curriculum Map - Primary Assessment Methods reported across all MEM courses

Curriculum Mapping Conclusions

Program Response - Actions Taken:

- Since adopting the original set of PLOs from the New York campus, the NYIT Vancouver MEM program has undergone significant changes with the overhaul of the original program learning outcomes and a rebuild based on industry needs and mission delivery. An EDI PLO

was added to equip students with skills for modern work environments. Additionally, many course level outcomes have been amended or rebuilt to align with the new set of PLOs, including strengthening EDI content and climate change related topics.

The program is successfully delivering many of its learning outcomes, with students achieving the expected depth of knowledge. Nonetheless, primary assessment methods may be over-relying on summative methods, indicating a potential area for improvement. Overall, these findings demonstrate a proactive approach to ensuring the program is meeting current educational needs and preparing students for successful careers in energy management.

Resources: Physical, Technological, Financial and Student Support

The MEM program provides the following physical and technological resources to students enrolled in the program; the Clean Tech Corner Laboratory, Libraries, and the Computer Laboratory

NYIT MEM Clean Tech Corner

The NYIT Clean Tech Corner is a physical 60 m^2 multipurpose laboratory space aimed at promoting and demonstrating clean technology solutions, ready for deployment in BC. The laboratory serves as a platform for MEM students, faculty, and researchers to collaborate, innovate, and develop energy solutions to address pressing decarbonization and energy efficiency challenges. It brings together technologies from diverse applications including heat pumps, ventilation systems, photovoltaic testing and design and lighting technologies. A recent addition to the lab is a 3D Ultimaker printer where students can bring their digital designs to life. Students create a 3D model using computer-aided design (CAD) software and print them out using various plastics to prototype their ideas. Currently, active laboratory bench apparatus includes:

- Back-Up Battery and Submetering System
- VFD Fan and Energy Management Controls
- HRV: Air-to-Air Heat Exchangers
- Heat Pump Station (Senville mini-split unit installation scheduled summer 2023)

One of the key objectives of the NYIT Clean Tech Corner is to create awareness and promote education about clean technologies. This includes organizing workshops and demonstrations by experts in the field and facilitating hands-on learning experiences. By engaging MEM students and connecting them to industrial activities, the initiative aims to train the next generation of clean technology leaders.

Another important aspect of the Clean Tech Corner is research and development. NYIT encourages its students and faculty to conduct industry research in clean technology and supports projects that have the potential for real-world impact. This can range from developing renewable energy solutions or implementing innovative energy recovery solutions. By fostering research in clean technology, NYIT aims to contribute to the advancement of clean energy solutions across BC.

By connecting students, faculty, and industry partners with the broader clean technology ecosystem, NYIT can leverage expertise, resources, and funding opportunities to accelerate the development and deployment of clean technologies to help CleanBC policies attain their goals. In summary, the NYIT Clean Tech Corner is an initiative that aims to promote clean technology solutions through education, research, collaboration, and entrepreneurship and is accessible to all NYIT MEM students.

Library Resources

The website of the Library system (https://vancouver.nyit.edu/library) offers comprehensive access to all services and resources many of which are provided by global New York campus services. MEM students can remotely browse the collection of books and journals, explore various databases, and access electronic resources. Students have the option to interact with reference librarians through the Ask-a-Librarian service. If a student is not present on the same campus as the librarian, they can make appointments online and arrange live video meetings using Zoom.

The library's website also offers access to information literacy services, including video tutorials that demonstrate effective search techniques for specific databases. Students can find additional resources relevant to their studies, such as guidance on writing and documenting papers, understanding plagiarism, and research pathfinders.

Electronic resources are available 24/7, both on and off campus, encompassing all NYIT global sites. To access these resources from off-campus or global locations, students are required to use their NYIT username and password.

The Vancouver campus now has a Learning Commons space for supporting academic and research needs. It features BrainLit lighting for a healthy study environment. The center holds a collection of reference books for reference. However, textbooks are not available for 'check-out.' Student-use kiosks and workstations provide access to digital resources and databases. A Bloomberg finance terminal is available for financial news. Printing and scanning services are provided. Ample study and group workspaces with collaborative technology are available. A bookable quiet study room is offered for focused, distraction-free work.

NYIT MEM Computer Laboratory

The NYIT Computer Laboratory is a 100 m^2 state-of-the-art facility designed to support computer science education for energy and systems modelling. The goal of the computer laboratory is to accelerate research, and innovation for MEM students. It serves as a hub for students, faculty, and researchers to engage in hands-on learning, explore modelling challenges to solve decarbonization challenges and collaborate on various team-based computer science projects.

The computer laboratory is equipped with 34 workstations to provide a dedicated space for students to work on programming assignments, software development projects, data analysis, and computer simulations. The facility is typically equipped with high-performance computers, servers, networking infrastructure, and specialized software tools necessary for various energy management disciplines. Students have access to eQuest, RETScreen Expert, System Advisor Model (SAM), Wolfram Mathematica, HOT2000, SPSS Statistics and Python 3.2.

The NYIT Computer Laboratory is also used for MEM classes and workshops. Instructors can leverage the facility to deliver lectures, conduct demonstrations, and provide hands-on training to students. NYIT has several courses directly leveraging the computer laboratory, including ENGY 718 High-Performance Building Envelopes, ENGY 730 Computer Applications and ENGY 610 Energy Management. The laboratory provides a platform for the practical application of theoretical concepts taught in classrooms, enabling students to gain practical skills and experience in a supportive environment.

The computer laboratory is equipped with the necessary security measures to protect the integrity of data and systems. It has access controls, network firewalls, and other safeguards to ensure a secure computing environment. The laboratory is an open-access space for students across the MEM program and is particularly important for students who do not have the financial means to acquire resources on their own.

Faculty Performance: Quality of Teaching and Supervision

Delivery of NYIT courses is via a combination of adjuncts and full-time faculty members. Core full time faculty members have demonstrable currency in their fields of specialization. All MEM faculty members are expected to maintain connections to industry and are current in their specialization and provide opportunities to network and collaborate with industry professionals. This leads to the enhancement of teaching quality with industry partnerships, guest lectures, and internship or research opportunities, enhancing student exposure to real-world professional practices. As part of the employment expectation at NYIT, faculty maintain up-to-date knowledge, practical application of concepts, enhanced teaching methods, emphasis on professional ethics, industry connections, and mentorship skills collectively enhance the learning experience and prepare students for successful careers in engineering. Figure 4 shows that student evaluations for energy management courses (ENGY) consistently achieve higher levels of student satisfaction than the overall (all campuses) NYIT average.

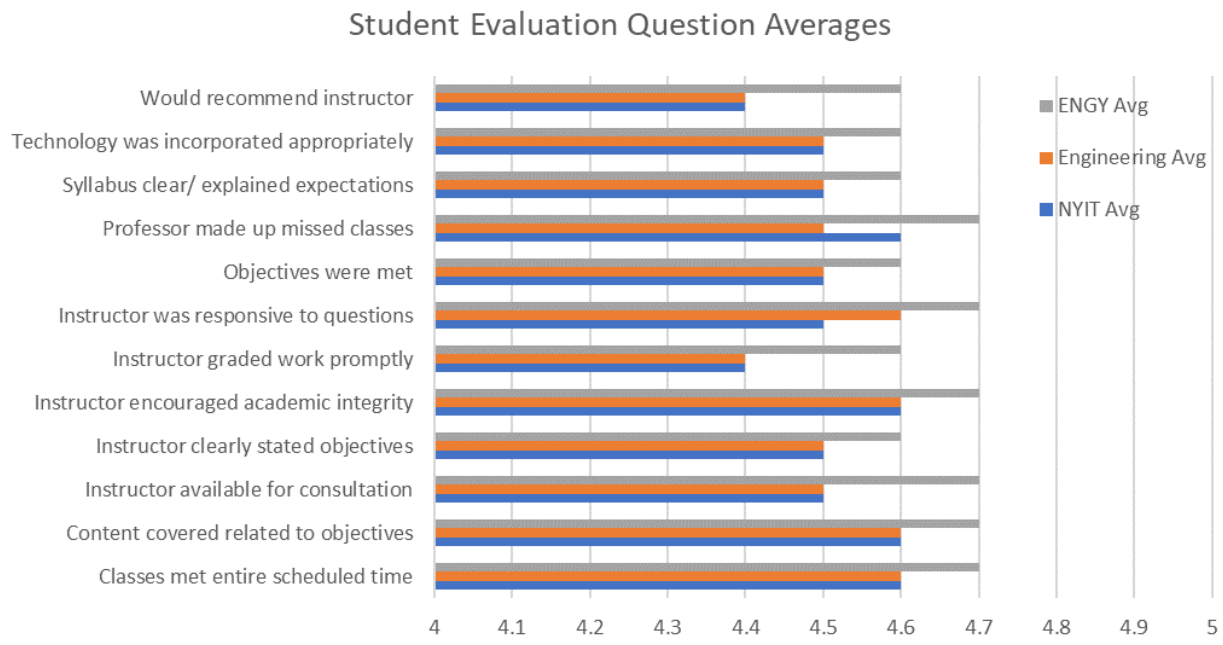

Figure 4: Average results of questions posed during course evaluations, extracted from Spring 2023 student evaluations.

Adjunct faculty similarly bring in industrial experience, but often from a more highly specialized technical lens. Adjunct support specialty elective courses, which brings breadth to the curriculum to allow students to explore topics of their choosing. Adjuncts are selected based on the quality of both their teaching experience and industrial experience. The MEM ratio of faculty to adjuncts is provided in Figure 5 which shows the growth of faculty to support diversity and access to expert energy management knowledge.

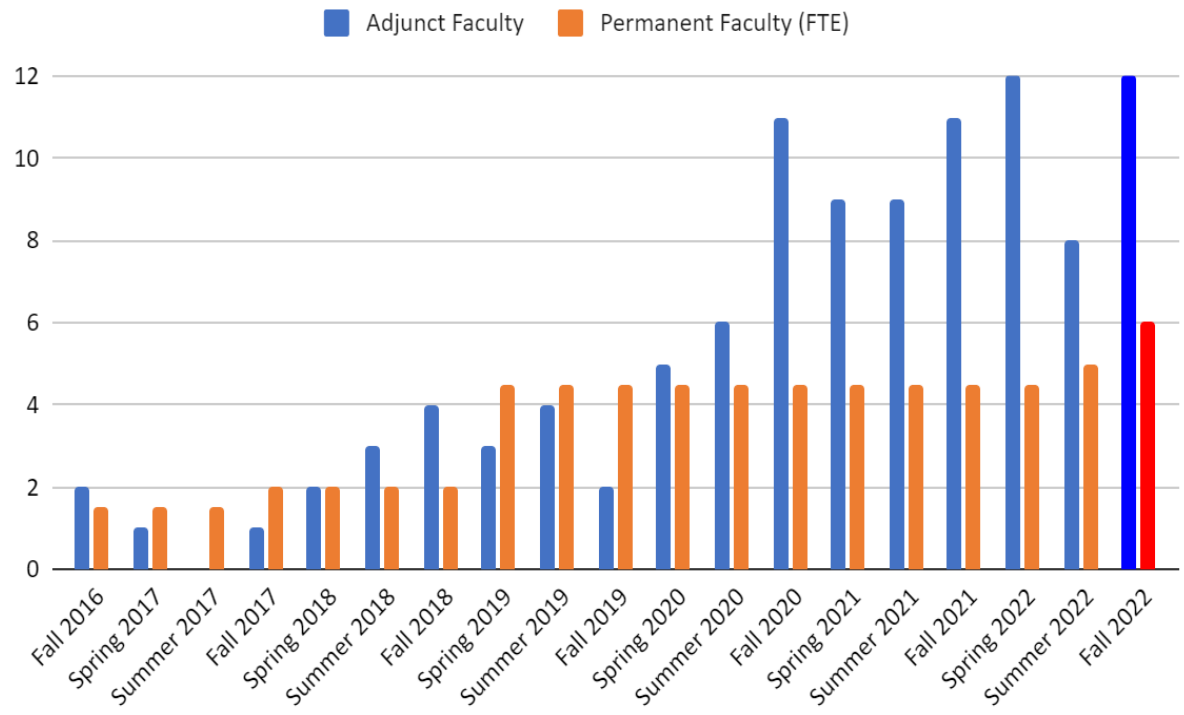

Figure 5: Growth of faculty for Vancouver MEM adjunct and core faculty members. Permanent faculty have a seven-section load per semester (sometimes lower depending on other responsibility levels), and adjuncts have a one-section load (can be a little higher)

Three core faculty members with a P.Eng accreditation are valuable assets for teaching in the MEM program because they are required to maintain their accreditation through ongoing training. The P.Eng accreditation must continuously engage in professional development activities to stay current with industry trends, advancements, and best practices. This ensures that they bring the latest knowledge and expertise into the classroom, providing students with relevant and cutting-edge information. Maintaining a P.Eng accreditation requires adherence to a code of ethics and

professional standards. Faculty members with this accreditation can instill these values in their students, promoting integrity, responsibility, and professionalism in energy management careers.

Program Response - Actions Taken: While the evaluation data in Figure 4 shows student satisfaction for MEM faculty above NYIT benchmarks for every category, there are always opportunities for improvement. Across all programs, NYIT Vancouver has been determined that mid-term evaluations can be more effective for understanding student needs before the course concludes. In addition to the usual end-of-term evaluations, mid-term evaluations are now encouraged for all MEM courses. The results can be used by teaching instructors to optimize course delivery and ensure that students support is improved wherever there is a reported issue.

Teaching Assistants

In the MEM program, Teaching Assistants play a supporting role in course delivery. TAs are employed from our pool of current graduate students who have demonstrated exceptional knowledge and commitment to our program. Their responsibilities encompass a wide range of tasks aimed at enhancing the educational process and fostering student success.

The primary roles of TAs in our program are to assist course instructors in conducting lab sessions, facilitating discussions, and providing preliminary reviews of student work. They provide valuable insights, explanations, and examples to help MEM students grasp complex concepts related to energy management. TAs collaborate with instructors to review teaching materials, such as assignments, and lab exercises, ensuring that they align with the curriculum and meet the desired learning outcomes. While TAs provide support in the program, they are not permitted to provide grades for midterms, final exams and project reports, nor significantly influence the final mark of any student. Final grades are independently provided by faculty.

TAs also play a significant role in student engagement and support. They hold regular office hours, during which students can seek clarification on course material, discuss challenging topics, and receive guidance on assignments and projects. TAs provide individualized attention, addressing students' questions and concerns and offering suggestions for improvement. This personalized interaction fosters a supportive learning environment and helps students build a deeper understanding of energy management principles.

Overall, TAs in our Energy Management educational program serve as valuable student resources. Their expertise, support, and guidance contribute to the students' academic growth, enhance their learning experience, and prepare them for successful careers in the field. The collaborative efforts

between TAs, instructors, and students create a dynamic educational ecosystem, fostering a strong sense of community and empowering students to excel in their energy management studies.

However, there are challenges due to the lack of continuity which refers to the consistent presence of TAs throughout the duration of a degree program. Master's programs typically have high TA turnover rates due to periodic student graduation, which impacts the effectiveness and quality of support for students. It takes several semesters for TAs to develop an understanding of the course material, curriculum, and teaching methodologies. Once they become familiar with the specific challenges and needs of students, they can provide targeted support and guidance. When TAs change, this accumulated knowledge is lost, and new TAs need to spend time getting up to speed, resulting in extra work for faculty and students.

Another consequence of the lack of continuity is the challenge of maintaining consistent grading standards. TAs who have been with a course or program for an extended period develop a shared understanding of grading criteria and expectations.

Program Response - Actions Taken: There are few options to manage the continuity challenge, however, fostering open communication channels between TAs, instructors, and students has facilitated the exchange of knowledge and support, mitigating the impact of turnover. Wherever possible, outgoing TAs are encouraged to work with incoming TAs to ensure a handover of knowledge. However, while this sounds like a viable solution, it has been proven to be logistically challenging to implement.

AI Assistance

The arrival of generative AI has opened both challenges and opportunities for the MEM program. In the rapidly evolving landscape of education, the integration of Artificial Intelligence (AI) tools has become increasingly prevalent. To ensure the responsible and effective use of AIs within the MEM program, it was essential to establish guidelines as early as possible. Usage guidelines were developed early in 2023 with the aim of providing clarity on the use of AI, specifically ChatGPT, within the context of coursework. By adhering to these MEM AI policy guidelines, instructors and students can create an environment that promotes learning and academic integrity. MEM faculty worked together to cogenerate a set of guidelines and to provide workshops and support AI skills and critical thinking.

MEM Permissions and Restrictions:

- Course-level permissions: The decision to incorporate AI tools, such as large language models (LLMs), into coursework lies with the course instructor. Instructors should establish their own policies to facilitate the optimal use of AIs in a learning environment.
- Ungraded activities: The use of AI in ungraded activities, such as writing communications or professional development tasks, is permitted and encouraged. For example, an LLM can be used to generate text to use informationally.
- Graded work: AI should not be utilized in examinations, assignments, or any other graded work, unless explicit permission has been granted by the instructor.

MEM Originality and Merit:

- AI-generated content: Content produced by AI does not qualify as original work and cannot be awarded merit in grading without a substantial additional contribution from the student.
- Requirements for merit: To earn merit, students must augment AI-generated content with evidence-based original work, such as citations from high-quality sources or new analytical contributions (e.g., computational energy modelling).

Plagiarism and Academic Misconduct:

- Responsibility for misconduct: All existing rules on plagiarism and academic misconduct apply when using AI. Students are solely responsible for any academic misconduct resulting from the use of AI tools.
- Citing AI-generated "facts": Students must not include AI-generated "facts" without proper citations to high-quality primary sources. MEM students are informed that contribution and citable evidence is a requirement throughout the program.

Referencing Guidelines:

- AI as a source: LLMs or any other AI cannot be used as a credible source of information, similar to tertiary sources like Wikipedia. Direct citations to LLMs are not acceptable.
- Use of primary sources: Students must seek high-quality primary sources to support their work.
- Workflow for citations: Students can use AI tools like ChatGPT for preliminary development, but they must then find credible sources independently, evaluate their quality, and cite them appropriately. Hyperlinked references (URLs, DOIs, etc.) are encouraged.

Program Response - Actions Taken: The MEM program is at an advanced stage for the creation of policies to ensure that LLMs and similar AI tools primarily can serve as tools and writing aids. While LLMs can assist in generating well-constructed sentences and prose, NYIT policies are designed to ensure that students understand the limitations of AI. By adhering to NYIT MEM

guidelines, both instructors and students can ensure responsible and effective use of AI in a learning environment while upholding academic integrity.

Work Integrated Learning

In the past, NYIT EM has utilized a Request for Proposal (RFP) for industrial projects to provide students a Work Integrated Learning (WIL) experience of industrial processes and research with industrial partners. The RFP approach has been successful with at least 1 in 10 projects sponsored by industry partners. However, the process has been challenging due to the need for more flexibility for innovation. This is because an RFP approach is a prescriptive 'command and complete' process which is confined to a conventional consulting process. Recognizing the need for change, NYIT MEM is experimenting with a Request for Solutions (RFS) approach which opens the door for innovation-based learning.

A RFS approach is already well established and used by the Government of Canada and other organisations to invite innovative approaches to existing or upcoming challenges. In a RFS environment, students create a ‘Solution Pitch’ to answer an industry call. This encourages an innovation-based approach. Student ‘Responders’ propose solutions, including a robust design and testing plan.

The Request for Solutions (RFS) approach offers several benefits to industry, making it a useful tool for collaboration and problem-solving. The RFS approach allows industry partners to define the scope of their challenges, while leaving room for students to propose solutions. This flexibility enables industry partners to adapt and refine their problem statements based on emerging trends or changing needs. Students' solutions can provide fresh insights and adaptability, allowing industry partners to stay agile in a dynamic business environment.

Collaboration and Knowledge Transfer: The RFS approach facilitates collaboration between industry and NYIT EM students. By engaging with students throughout their studies, industry partners can establish long-term relationships and tap into the new talent pool. This collaboration allows for knowledge transfer, where industry partners can share their real-world experiences and challenges while students and faculty can provide cutting-edge research and theoretical frameworks. This exchange of knowledge benefits both parties and contributes to the development of practical and impactful solutions.

Talent Recruitment and Evaluation: The RFS environment serves as a platform for industry partners to identify and evaluate potential talent for future employment. By observing students' performance,

problem-solving abilities, and innovative thinking throughout the RFS process, industry partners can assess their suitability for employment. This can serve as a pipeline for recruiting skilled individuals who have already demonstrated their capabilities in addressing industry challenges.

Program Response - Actions Taken: The RFS approach is currently under pilot development. The new format has been launched in the Summer 2023. Early results show that the 'innovation focus' fosters collaboration and agility in problem-solving. The Summer 2023 cohort of RFS capstone projects was focused on energy analysis for mobile film trailers, as frequently deployed by the Vancouver film industry. By leveraging the opportunities of the capstone course (ENGY 890) and NYIT Vancouver's partnership with the film industry, students provided technical analysis on energy consumption and carbon emissions. The next step for the new RFS systems is a broader launch in Autumn 2023.

Employment Outcomes

Employment outcomes for NYIT MEM graduates exceed 85% within the first year of graduation. A comparison of MEM employment outcomes against employment outcomes for other schools was not possible due to a lack of external data, and the only available comparison is against province-wide employment rates. The chart shown in Figure 6 compares the employment rates of NYIT alumni against a benchmark based on general BC Employment statistics (WorkBC, 2022). Employment rates for MEM graduates appear to be good compared to provincial data, but there remains an important unresolved issue about the remaining 15% of MEM students who have not found employment. Research continues to understand the fate of unemployed students, including tracking on LinkedIn to determine if unemployed students are actively seeking work.

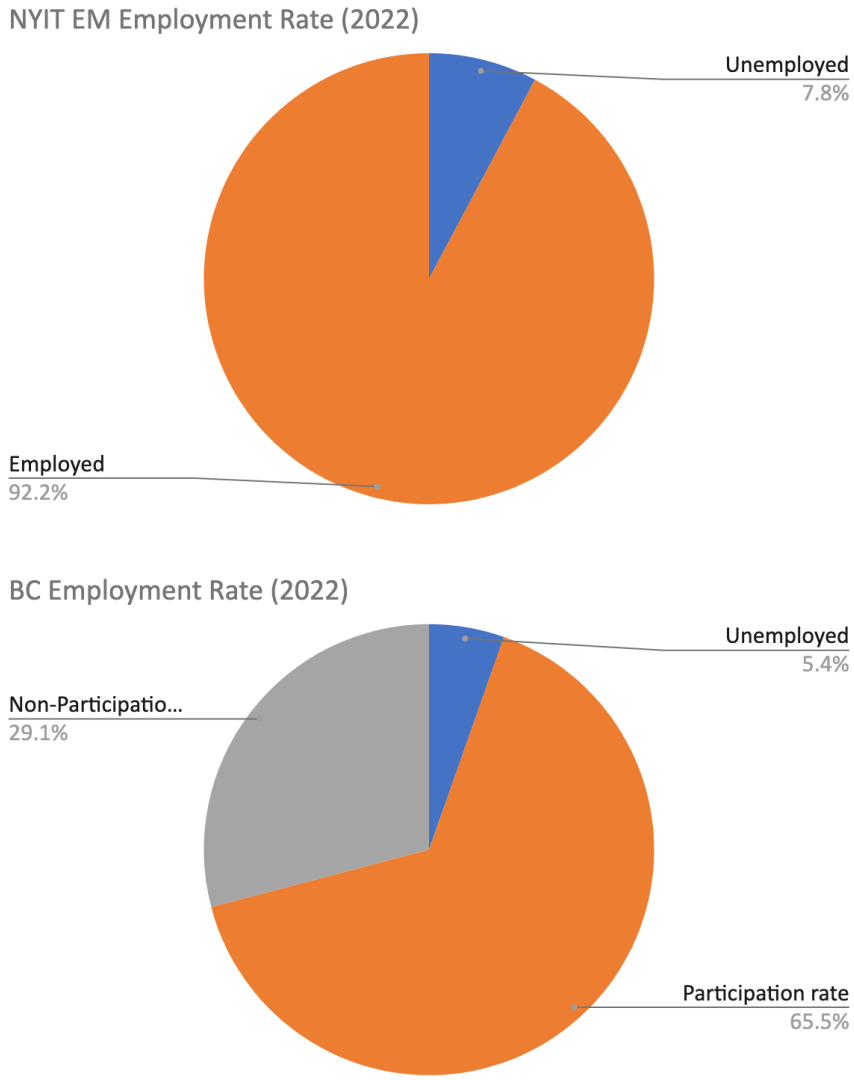

Figure 6: Employment Rates and Benchmark: The chart compares the employment rates of NYIT alumni (top) against the BC general employment rates benchmark (bottom) across all disciplines. The employment rates indicate the percentage of individuals who are employed.

Exit interview data also shows that 82% of graduates intend to stay in British Columbia for to participate in energy management which indicates a positive alignment between the program's focus and the job opportunities available in the region.

Overall, the high employment rate and the significant number of MEM graduates staying in BC and engaging in energy management reflect the positive impact of the program and highlight the success of NYIT in preparing students for careers in this field. However, alumni feedback indicates that many students are stepping into junior-level roles, despite being intermediate-level professionals in their home countries. Specifically, some graduates are starting their careers at elementary positions in the field, such as technicians at Ballard Power. This is not a problem for younger alumni with little existing work experience but can be an issue for alumni already with more than five years of work experience. For these alumni, accepting a junior position, even temporarily, can be viewed as a step backward.

Exit interview data reveals the need for alumni to receive continued support after graduation. The most recent exit survey was conducted on a total 145 alumni (Spring to Fall 2022 graduates), and 133 students responded. Among these students, 117 expressed their desire for career support upon graduation. Upon further investigation, it was found that these students require assistance in several areas, such as resume and cover letter writing, job postings and references, job search strategies, interview preparation, certification and licensing guidance, general soft skill development, career counselling, and interview training.

Program Response - Actions Taken: To address alumni needs, our school has taken the following actions:

- Two-day career workshops are to be conducted every semester, specifically tailored for the graduating class. These workshops cover the aforementioned aspects and take place after the final exams.
- Recognizing the importance of certifications and the associated costs, NYIT Career Services is currently collaborating with agents/companies to negotiate bulk package access for students. This collaboration aims to reduce certification expenses, enabling more students to pursue certifications while still enrolled in school.
- Lifetime access to Handshake and career services for our students. Once they graduate, they are welcome to connect with NYIT Career Services to seek guidance and support whenever needed.
- The Alumni Department has established WhatsApp groups and LinkedIn groups, moderated by both students and faculty, to facilitate communication among students and senior alumni. In these groups, senior alumni are encouraged to share job postings and details of relevant workshops to benefit current students.
- Career Services publishes openings with a "Hot Job of the week" email every week, capturing the latest job opening across Canada in the energy management field. This email is received by both current students and graduates.

These long-term actions reflect the value and relevance of the NYIT MEM program in preparing and supporting graduates for successful careers in the energy management field.

Conclusion

Overall, the NYIT Energy Management (MEM) Program self-study presents a comprehensive overview of the curriculum structure, admissions requirements, curriculum mapping, resources, faculty performance, and employment outcomes. While the report highlights some positive aspects of the program, a critical analysis reveals several areas of concern and limitations.

1. The lack of emphasis on certain program learning outcomes was identified. The course mapping exercies acknowledges that there is a relatively low density of course learning outcomes supporting "PLO2: Impact of climate change and its associated mitigation and adaptation policies will have on different energy systems." This is a significant shortcoming considering the urgent need for professionals who can address the challenges posed by climate change in the energy management field. The addition of a course on systems adaptability and resiliency planning and redevelopment of our core ENGY 610 Energy Management course is a step in the right direction.
2. A lack of meaningful inclusion of EDI course materials in the original curriculum, as inherited from the New York program, was determined to be misaligned with the program mission. The development of a new EDI-focussed PLO specifically aimed at addressing these issues is a positive step towards achieving meaningful preparation for students entering the workforce. By recognizing the need for a dedicated EDI PLO, MEM will work towards ensuring that students are exposed to a curriculum that reflects a more comprehensive understanding of EDI topics such as ethics and Indigenous issues. This is crucial in fostering a more inclusive and diverse learning environment that prepares students to engage with the complex social and cultural issues in BC. The inclusion of EDI course material within the curriculum helps students develop a broader awareness of ethical considerations, diverse perspectives, and social justice issues. To support this transition, all NYIT instructors are required to complete professional development to effectively incorporate EDI course material into their teaching. This can include training on cultural sensitivity, the use of inclusive pedagogies, and the integration of Indigenous perspectives into course content.
3. Overreliance on summative assessment methods, such as final exams and reports, was uncovered by the course mapping analysis. While these methods have their merits, the limited use of diagnostic and formative assessments raises concerns about the program's ability to identify and address students' weaknesses, particularly for strengthening technical communication skills. A more balanced approach to assessment is being adopted to provide better support for students' learning and development, which includes the inclusion of interactive learning experiences and more opportunities to collaborate in technical English, a critically important skill for our international base of students.

4. The lack of continuity in TA positions was identified. This creates challenges regarding institutional knowledge loss, inconsistent student support, varying grading standards, and limited TA professional development. Open communication and overlapping TA positions will foster a better transfer of knowledge between new and departing TAs.
5. The arrival of generative AI has brought both challenges and opportunities to the MEM program. To navigate this rapidly evolving landscape, the program has embraced the integration of AI tools. Usage guidelines have been established to ensure the responsible and effective use of AI in coursework. These guidelines provide clarity, promote learning, and uphold academic integrity. MEM faculty collaborated to co-generate guidance, offering workshops and student support to enhance AI literacy and skills.

Finally, the self-study mentions the high employment rates of NYIT MEM graduates, which is a positive outcome. However, there exists data gaps on the types of employment obtained, the level of job satisfaction, or the relevance of the jobs to the program's learning outcomes. A more comprehensive examination of the employment outcomes would provide a clearer picture of the program's success in preparing graduates for the energy management industry.

Overall, the NYIT MEM program demonstrates a commitment to delivering a comprehensive and relevant education in energy management, preparing students for successful careers in the field and meeting industry demands. The program's continuous improvement through curriculum mapping and faculty engagement ensures that it remains up-to-date and aligned with current industry trends and practices.

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Appendix A: DQAB Quality Assurance Process Audit (QAPA) Assessment Criteria

The QAPA assessment will focus on:

1. Overall process

a. Does the process reflect the institution's mandate, mission, and values?

(i) The institution should be able to demonstrate that it has an established institutional and program review planning cycle and process to assess the effectiveness of its educational programs and services, their responsiveness to student, labour market, and social needs.

(ii) The process should contribute to the continuous improvement of the institution.

b. Is the scope of the process appropriate?

(i) There should be evidence of a formal, institutionally approved policy and procedure for the periodic review of programs against published standards that includes the following characteristics:

- *A self-study undertaken by faculty members and administrators of the program based on evidence relating to program performance, including strengths and weaknesses, desired improvements, and future directions. A self-study takes into account:*
  - *the continuing appropriateness of the program's structure, admissions requirements, method of delivery and curriculum for the program's educational goals and standards;*
  - *the adequacy and effective use of resources (physical, technological, financial and human);*
  - *faculty performance including the quality of teaching and supervision and demonstrable currency in the field of specialization;*
  - *that the learning outcomes achieved by students/graduates meet the program's stated goals, the credential level standard, and where appropriate, the standards of any related regulatory, accrediting or professional association;*
  - *the continuing adequacy of the methods used for evaluating student progress and achievement to ensure that the program's stated goals have been achieved;*
  - *the graduate satisfaction level, student satisfaction level, and graduation rate; and*
  - *where appropriate, the graduate employment rates, employer satisfaction level, and advisory board satisfaction level.*
- *An assessment conducted by a panel that includes independent experts external to*

the institution. The assessment should normally include a site visit, a written report that assesses program quality and may recommend quality improvements; and an institution response to the report;

- *A summary of the conclusions of the evaluation that is made appropriately available.*

(ii) *The institution can demonstrate that it has a policy and process for new program approval that includes peer / external review by appropriate experts.*

c. Are the guidelines differentiated and adaptable to respond to the needs and contexts of different units, e.g. faculties or departments or credential level?

(i) The guidelines are adaptable to the range of programs and offerings within the institution.

(ii) The guidelines provide measurable, consistent means and direction to undertake diversified program review.

(iii)The guidelines are consistent with institutional Mandate, mission, vision and associated strategic goals.

d. Does the process promote quality improvement?

(i) The institution should be able to demonstrate that it has appropriate accountability mechanisms functioning for vocational, professional and academic programs.

(ii) The institution should be able to demonstrate how faculty scholarship and professional development inform teaching (including graduate teaching) and continue to be a foundation for ensuring that programming is up to date.

(iii) The institution should be able to demonstrate how learning outcomes are being achieved and how student progress is assessed and measured.

2. Review findings

a. Were the responses to the sample program review findings adequate?

The institution has a follow up process for internal program reviews and acts in accordance with it.

b. Does the process inform future decision making?

The program review ensures that the program remains consistent with the institution's current mission, goals and long-range plan.

c. Are the review findings appropriately disseminated?

The institution has a well-defined system to disseminate the review findings to the appropriate entities.

Appendix B: Vancouver KPI Index for Reporting

Sourced from: Greg Gerber (Nov 2022)

Quantitative KPI's

Program/Campus aggregate data

1) Count of Graduating Students by Semester
2) Student Application Count, Admission count, and admission rates (%)
3) Student enrolled deposit count vs enrolled count
4) Enrolment Count by Semester
5) Global Representation – Country of birth, Total, Active, by semester
6) Degrees Conferred by program, year, and semester
7) Gender Ratio comparison by semester (stacked bar or donut chart)
8) Repeated course counts by semester
9) FTE count Full time versus Adjunct faculty.
10) FTE ratios to student count by semester
11) Student Outcomes: Employment (against benchmark if possible)
12) Class size / Section density
13) Retention Rate by program
14) Graduation rate by program
15) Grade or GPA distribution by program by semester
16) Student Satisfaction
17) Alumni Satisfaction
18) Faculty Teaching Quality (from Student evaluations)
19) Student Co-op program engagement count and rates by semester

Campus-Wide

20) Classroom Utilization
21) Study room Utilization (by booking software)
    a. Need to separate classroom vs ad hoc room booking.
22) Classrooms in Ad Astra,
23) Computer Lab Utilization (bookings and class schedule)
24) On-Campus Student employment
25) Students by age band
26) Faculty Satisfaction

Appendix C: Business Case Data: MS-EM Enrollment and Faculty Sufficiency

Source: *Appendix 13: Business Plan For Fiscal Years 2021-2026*

1.1 MS-EM Enrollment and Faculty Sufficiency

With Degree Consent granted in March 16, 2016, the delivery of the MS-EM program launched in the Fall 16. Enrolment has grown steadily. Even during the Covid-19 Pandemic, enrolment was strong. The in person classroom requirement of BCPNP rules were relaxed during 2020 and 2021 which allowed students to continue in the program online and still be eligible for this popular program.

Academic Year	2021/22	2022/23	2023/24	2024/25	2025/26
Overall enrollment					
Worst Case (Pessimistic)	160	180	200	200	200
Midrange (Conservative)	200	220	230	240	250
Best Case (Optimistic)	250	250	250	250	275

Table 6: Projected MS-EM Student Enrollment – Vancouver.

Faculty Sufficiency

The Energy Management program has four full-time faculty and one part time faculty. A sixth faculty is planned for AY 2021/22. Assistant Dean Charron is given 15 credit hours of release time and a stipend to serve as the Vancouver based Administrator. Adjunct faculty with professional experience are appointed as needed to provide current field based experience to balance the theoretical knowledge of the full-time faculty.

Academic Year	AY 2021/22	AY 2022/23	AY 2023/24	AY 2024/25	AY 2025/26
Total Full-Time Vancouver Faculty					

Worst Case	6	6	6	6	6
Midrange (Conservative)	6	6	7	7	7
Best Case (Optimistic)	6	7	7	7	8

Table 7: Faculty Requirements under Each Scenario.

Appendix D: Requirement by Ministry of Advanced Education and Skills Training (September 21, 2021)

Name of Institution: New York Institute of Technology

Consent for: Master of Energy Management

The following special terms and conditions are attached to the consent from the Minister of Advanced

Education and Skills Training under section 4(3) of the Degree Authorization Act.

1) Credential Recognition and Nomenclature: New York Institute of Technology must change the credential to “Master of Energy Management” within one year.

2) Lasting and meaningful reconciliation: Reconciliation is an ongoing process and a shared responsibility for us all. Government’s unanimous passage of the Declaration on the Rights of

Indigenous Peoples Act was a significant step forward in this journey – one that all post-secondary institutions are expected to support as we work in cooperation with Indigenous peoples to establish a clear and sustainable path to lasting reconciliation. True reconciliation will take time and ongoing commitment to work with Indigenous peoples as they move towards self-determination. Guiding these efforts, post-secondary institutions must also remain focused on creating opportunities that implement the Truth and Reconciliation Commission Calls to Action..

3) Equity and anti-racism: Our province’s history, identity and strength are rooted in its diverse population. Yet racialized and marginalized people face historic and present-day barriers that limit their full participation in their communities, workplaces, government and their lives. The post-secondary sector has a moral and ethical responsibility to tackle systemic discrimination in all its forms – and every institution has a role in this work. All post-secondary institutions are encouraged to adopt the Gender-Based Analysis Plus (GBA+) lens to ensure equity is reflected in your operations (e.g., physical and human resources) and programs..

4) Reporting: A report on the institution’s progress in #2 and #3 listed above is be included with the Annual Report to the ministry for the duration of the consent period.

Appendix E: NYIT Mission and Academic Goals

Sourced: *Appendix 13: Business Plan For Fiscal Years 2021-2026: NYIT 2030 version 2.0*

NYIT-VANCOUVER VISION

1.1 Mission Statement and Academic Goals

The NYIT mission is to:

Provide career-oriented professional education with a focus on technology

Offer access to all qualified students

Support application-oriented research that benefits the larger world

NYIT Promise

At NYIT, caring and expert faculty and staff provide a student experience that

- Inspires critically creative thinking in professional programs infused with technology; and
- Empowers our graduates to change the world, to solve 21st century challenges and to reinvent the future.

1.2 Strategic Planning

In 2006, NYIT set its 25-year vision in its *NYIT 2030: Setting Directions, Meeting Challenges*. Achievement of the vision has been supported by annual work plans that assign tasks, responsibilities, due dates and resources. Key performance indicators have been tracked. To ensure that the strategic plan remained strong, focused and current, NYIT completed a comprehensive review of the "2030" plan, and updated it in 2015: *NYIT 2030 version 2.0*. This included a restatement of the NYIT vision and goals for 2030 to reflect the accomplishments of the previous 10 years, the changes of the time, and NYIT's higher ambitions for the future. The document offered the following goals:

By 2030:

1. NYIT's forward-thinking academic portfolio, including several top-rated graduate and professional programs, will have anticipated the needs of the global marketplace, ensuring that NYIT graduates are distinctly profession-ready.
2. NYIT's applications-oriented research and programs will demonstrate the exceptional value derived from its unique constellation of academic specialties, links to industry, interdisciplinary collaborations, global reach, and technology-infused environment.
3. NYIT will be a student-centered community where members of the NYIT faculty, administration, staff and alumni provide all students with the transformative experiences at the heart of a university education.
4. NYIT will be home to high quality teaching and learning that is consistently challenging, engaging, learner-centered, and profession-focused.
5. NYIT faculty, administration, staff, students and alumni will address the globally significant challenges of an interconnected world at local, national, or global levels in their academic, professional and civic lives.
6. NYIT will invest in continuous improvement in the quality and reputation of its academic and co-curricular programs in pursuit of its strategic vision.

In alignment with the goals of NYIT, the Vancouver campus has local goals that guide planning and decisions.

Goal 1: Offer unique and distinctive high-quality technology focused applied career and professional oriented programs strongly aligned with the needs of the British Columbia business community to help grow the local economy;

Goal 2: Increase the institution's visibility and brand awareness in Vancouver by actively promoting its offerings, and by establishing post-secondary, community, and business partnerships and providing pathways from BC Colleges to our graduate degree programs;

Goal 3: Become a model student-centered university with a focus on career services, internships, and expanded facilities with larger classrooms, and quiet study spaces.

Goal 4: Provide students with opportunities to learn about Indigenous peoples of Canada and create opportunities that implement the Truth and Reconciliation Commission calls to action.

To reach these goals, NYIT Vancouver will focus on the following initiatives:

- Focus on identifying new technology focused programs that will meet the needs of British Columbia's labour requirements.

- Working closely with local businesses and communities to provide well-qualified and highly skilled graduates, able to contribute to the B.C. economy.
- Provide student supports so they are successful in their program and successful obtaining work in their field post-graduation.
- Work with local Indigenous experts and seek respectful and informed ways to provide students with an understanding the history of Canada and the Indigenous cultures. Create opportunities to encourage Indigenous students to attend NYIT by creating financial supports and a welcoming environment.

Appendix F: New York Program Review Process (draft)

Sourced from: Babak Dastgheib-Beheshti (email correspondence May 2022)

#	Program Attribute	Review Cycle	Reviewer	Comments
1	Program's Learning Outcomes Statements	Once per year	Faculty	Noted in faculty meeting minutes
2		Once per year	IAB	Noted in Iab meeting minutes
3		Once every two years	Graduating Students	Exit surveys
4		Once every three years	Alumni	Online surveys
5	Assessment of Program Learning Outcomes Achievement by Students	Two outcomes per Year – Three year cycle to assess all outcomes	Faculty	Through direct measurement of student work throughout their courses (FCAR)
6	Degree program's structure, admissions requirements, degree requirements, courses, degree programs, method of delivery	Once every three years	Faculty, IAB	
7	Student Success: • Retention rates • Graduation rates • Employment rates	Once per year	Faculty	Noted in faculty meeting minutes
8	Resource Assessment	Once every two years	Faculty/Administration	Generate a report from the

				Campus Dean's Office
9	Faculty Effectiveness	Once every year	Associate Dean	Annual faculty reviews
10	Self Study Report (SSR)	Once every 6 years	Associate Dean	Use Template that documents all items above
11	Overall External Program Review	Once every 6 years – one semester following SSR	External Reviewers	Use Template

1. a description of the degree program's structure, admissions requirements, degree requirements, courses, degree programs, method of delivery and curriculum for the program's educational goals and standards;

2. an explanation on how resources (physical, technological, financial and human) are distributed;

3. information about the degree program's collective faculty performance including the quality of teaching and supervision and demonstrable currency in the field of specialization;

4. a description of the learning outcomes achieved by students/graduates;

5. a description of the degree program's stated goals, the credential level standard, and where appropriate, the standards of any related regulatory, accrediting or professional association;

6. a description of the methods used for evaluating student progress and how these methods and the progress of students align with the degree program's stated goals;

7. aggregate information about the satisfaction level of students who graduate from the degree program, student satisfaction and graduation rate; and

8. where appropriate, information about the employment rates for students who have graduated from the degree program, employer satisfaction level, industry

representative satisfaction level and advisory board or other external/stakeholder committee, council and/or group satisfaction leve