External Review Report

New York Institute of Technology Master's of Energy Management

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Credentials of external review panel:

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Executive Summary

This report provides a concise assessment of the Master's of Energy Management program at New York Institute of Technology. The assessment is based on a thorough review of the self-study guide and syllabi, and interviews with the program's associate dean, full-time and adjunct faculty, current students, and alumni during October and November 2023.

The review committee commends the program on the quality and breadth of teaching faculty; the blend of full-time faculty and adjuncts provides a combination of continuity and stability with fresh industry perspectives. Examples of activities to continue include employing professors with industry experience, mandatory faculty training on EDI and indigenous issues, continuously updating course syllabi, learning outcomes, and content, and investing in new labs/equipment.

The committee also noted some aspects of the program that could be improved. Examples of activities to start include helping students develop networking skills, hiring teach assistants for longer terms, providing opportunities for adjunct faculty to integrate into the program, and providing more hands-on experience/activities for students (e.g. capstone projects).

On the whole, the program is unique and effective in training students in this important subject area. We believe there are opportunities for continued improvement, but do not have major recommendations requiring immediate attention.

This report provides a concise assessment of the Master's of Energy Management program at New York Institute of Technology. The assessment is based on a thorough review of the self-study guide and syllabi, and interviews with the program's associate dean, full-time and adjunct faculty, current students, and alumni during October and November 2023.

The review committee commends the program on the quality and breadth of teaching faculty; the blend of full-time faculty and adjuncts provides a combination of continuity and stability with fresh industry perspectives. Given the applied nature of the program, it is critical for up-to-date information to be taught to the students. Moreover, structured approaches to ensuring consistency and updates in the courses is a strength. The faculty are trained via mandatory annual EDI and Indigenous workshops, which is an important step towards integrating these issues into courses, learning objectives, and assessments. Continued investment in laboratories is also seen as a strength and is critical to ensure that students develop hands-on understanding of a wide variety of energy systems.

However, some aspects of the program could be improved. Students need to be given more opportunities to improve their professional skills (e.g., networking, verbal communication, presenting) whether it be in classes (e.g., formal training and more opportunities to present to the class), participation in industry events, and co-operative education/internships. Further training and policies to integrate EDI and Indigenous issues into courses should be developed if this is the intention, as there appears to be inconsistencies between faculty and courses in this regard. There should be some consideration (e.g., new courses or activities) related to systems-level/integrated thinking and design so that students learn to connect topics and ensure compatibility and optimal design. Traditional laboratory facilities and activities should be augmented with existing data and a living lab approach, whereby students study NYIT buildings and other facilities.

On the whole, the program is unique and effective in training students in this important subject area. We believe there are opportunities for continued improvement, but do not have major recommendations requiring immediate attention.

The authors of this report are pleased to deliver a comprehensive review of the Master's of Energy Management program. The review is based on self-study and other documents, as well as a set of systematic interviews with a wide variety of current students, alumni, and faculty. On this basis, we have provided our review through two categories: start and continue. The start category refers to recommendations for new initiatives or directions, and the continue category includes policies, approaches, and other items that the review committee particularly praises. The continue category generally implies that a current initiative should be expanded or formalized. A third "stop" category was omitted as we did not identify any activities that we recommend ceasing.

Start

- Help students develop their networking skills; incentivize or sponsor students to attend local industry events.
- Ensure part-time faculty have training and awareness of EDI and indigenous topics; provide support for integrating EDI and indigenous issues into their course content.

- Hiring TAs for longer terms so that they can develop deeper knowledge of the material, teaching skills, and help maintain consistency across course sections.
- Teaching and applying systems-level thinking/integrated design such that students understand how to connect multiple course topics.
- Having more opportunities for adjunct faculty to integrate into the program. Some reported feeling somewhat isolated.
- Teaching about policies (e.g., incentives programs) so that students have practical knowledge that they can integrate early into their careers.
- Using a living lab approach to teaching, whereby the campus building(s) themselves are used to help provide experiential learning (e.g., energy bills, equipment, etc. can be studied).
- Include Capstone type group project with industry support in the curriculum.
- Provide more hands-on experience/activities for the students.
- Consider options to provide certificates/micro-credentials.
- Providing more internship placements for students and/or more support to help them to find placements.
- Increasing availability of courses so that students are able to choose from the full list of courses offered.

Continue

- Continue hiring and employing professors who have industry experience.
- Employing a combination of full-time and adjunct professors, as they each have their own strengths. A core team of full-time professors is critical for maintaining continuity and for ensuring key curriculum topics are delivered (e.g. EDI, Indigenous issues).
- Regularly reviewing and updating course content with developments in local codes/standards and technology.
- Providing mandatory EDI and Indigenous training to all faculty so that they are trained to integrate this material in courses.
- Integrating Indigenous voices and case studies into courses.
- Encouraging and funding research among faculty so that they remain familiar with the state-of-the-art.
- Providing formal training and opportunities to communicate in English – particularly verbally and in professional environments.
- Providing a broad course offering that covers a variety of different fields and topics within energy management.
- Providing co-operative education activities to help with professionalism and job preparation.
- Evolving the program, with particular attention to the selection of core courses to ensure they are appropriate.
- Ensuring that course material and learning outcomes will address future circumstances, such as resilience towards climate change.
- Reviewing syllabi and learning outcomes centrally so that administration has some control over updating materials and maintaining uniformity.

- Investing in new labs/equipment so that students gain experience with the state of the art in technologies.
- Improving consistency of grading/evaluation so ensure that students take courses that they perceive to be the most relevant to their career aspirations, rather than courses that are rumoured to be easy.