

Program Progress Report

Institutional Quality Assurance Program (IQAP) Review

University Network of Excellence in Nuclear Engineering (UNENE): Graduate Diploma in Nuclear Engineering

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Date of Site Visit: 2023

Progress Report Prepared by: Dr. Nikola Popov, UNENE Education Program Director,
Hanadi Attar-Elbard, UNENE Education Program Coordinator, Amy Clarke, UNENE
Operations Manager

**Please outline below how recommendations from the initial program review have been addressed.
[Please fill in one table for each recommendation from the original Final Assessment Report]**

Recommendation: Collaborate with industry to identify challenges and educational opportunities.
Responsibility for Implementation: Allan Lew, UNENE Operation Director Nik Popov, UNENE Education Program Director Ben Rouben, UNENE Secretary/Treasurer
Anticipated Timeline for Completion: December 2025
Additional Notes/Commentary: UNENE will collect and analyze response data from industry to produce an education needs report, including needs at the basic level (introductory courses), intermediate level (professional development), and advanced level (graduate education — M.Eng. and Diploma). UNENE will also continue to use the Annual R&D Workshop, attended by university and nuclear industry partners, as an avenue of communication at which industry can provide input on the topics and areas of importance.
Progress (check one) ☒ Completed ☐ In Progress ☐ Other (please explain)
Department's Comments: The education needs assessment launched in Summer 2023. Data was collected from 4 major industry members in the form of a detailed questionnaire, consisting of multiple choice and free-written responses and received over 300 responses addressing major education needs areas and awareness

and engagement with existing UNENE educational offerings at the graduate and professional development level.

Data pointed to the topic areas of highest interest and industry demand, as well as challenges in accessing the UNENE education program. This robust data set will be used to inform choices of development for UNENE graduate level and professional development level course offerings. It will also help UNENE tailor our efforts to better connect with industry and recruit to our programs.

Additionally, the UNENE Annual R&D Workshops in December 2023, 2024, and 2025 served as an opportunity for dialogue between industry members and academia to communicate reciprocally regarding areas of interest in research and education through workshop panels and individual discussions.

Dean's Comments:

The programs presents a thorough approach for engagement with industrial stakeholders. The Faculty will continue to support the program in this pursuit and aid in broader industrial connections where suitable.

QAC Comments (to be filled in by Quality Assurance Committee):

QAC reviewed this report and had no further comments or concerns

Recommendation:

Evaluate options for student migration between M.Eng. and Diploma programs.

Responsibility for Implementation:

Raluca Petria, former UNENE Administrator, Hanadi Attar-Elbard, current UNENE Administrator, with oversight by Dr. Nikola Popov and with collaboration with UNENE Grad Admins at other member universities.

Anticipated Timeline for Completion:

December 2025

Additional Notes/Commentary:

UNENE will coordinate with member universities to explore what options and limitations exist for students who wish to transfer from the Diploma to the M.Eng. program or vice versa. UNENE will clarify existing procedures and seek to lift any barriers to program transfer where possible, as permitted by university policies. Of particular interest is transfer between the Diploma program and the M.Eng. program such that completed Diploma requirements can be counted toward the M.Eng. degree completion — this possibility (among others) will be explored within the appropriate university frameworks at our member schools. This information will be compiled into a policy document outlining the options, which will be brought for review and approval/adoption at the Education Advisory Committee (EAC). Additionally, UNENE will create a student handbook that includes all program and university-level information necessary for students, including the program

transference information, but also information on general educational policies, rules, and regulations from UNENE and from each member university.

Progress (check one)

☒ Completed

☐ In Progress

☐ Other (please explain)

Department's Comments:

UNENE has updated and revised the existing university-specific program handbook at McMaster. This expanded handbook covers all essential topics necessary for students in the program. Feedback from the Faculty of Engineering Associate Dean of Graduate studies was collected and incorporated into the finalized handbook.

Following feedback from McMaster, this McMaster Student Handbook was finalized in August 2025 and will be revised to include identical program-general information but with unique school-specific information from each member school for a total of five editions. Arrangements have been made with the administrators at the other 4 core universities to transfer the McMaster UNENE Student Handbook into their own respective university handbooks.

Dean's Comments:

The Faculty is supportive of exploration of G.Dip to M.Eng pathways, indeed this option will now be available at McMaster (entering the calendar for Fall 2026) and we can assist the program in program changes to enable advanced credit for G.Dip. in the M.Eng.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation:

Examine how modules continue to be relevant and are updated when needed.

Responsibility for Implementation:

Dr. Nikola Popov, UNENE Education Program Director

Anticipated Timeline for Completion:

December 2025

Additional Notes/Commentary:

While UNENE professors will continue to conduct reviews of course content to ensure relevance of material, UNENE will additionally conduct an additional review for each upcoming academic course, as part of the ongoing efforts to introduce online delivery for all UNENE courses. In addition to ensuring material is current, professors will review course content, assessments, student engagement, and delivery tools, for compatibility with online delivery. Updates will continue as necessary.

Progress (check one) ☒ Completed ☐ In Progress ☐ Other (please explain)
Department's Comments: UNENE completed reviews and updated content for the following courses: UN804 Nuclear Reactor Heat Transport System Design, UN803 — Nuclear Reactor Safety Design, UN806 — Nuclear Fuel Engineering, UN602 — Nuclear Waste Management, and UN802 Nuclear Reactor Physics and UN503 — Nuclear Regulations. These course updates have thus far been successful at bringing material more in line with the current industry landscape, eliminating unnecessary redundancy or overlap in material between classes, and updating the delivery strategy for classes to include further student engagement opportunities. As part of the continuing effort to update UNENE courses for delivery to a large UNENE student audience, this action has been transferred to the Graduate Education Subcommittee of the UNENE Education Steering Committee and will be tracked as a continuing action.
Dean's Comments: This approach is reasonable and we support the program in conducting these reviews of lecture modules.
QAC Comments (to be filled in by Quality Assurance Committee): See above

Recommendation: Evaluate alternative methods of course delivery, including asynchronous delivery.
Responsibility for Implementation: Dr. Nik Popov, UNENE Education Program Director With support from Drs. Ben Rouben and Eleodor Nichita, additional faculty at member universities, members of administration, and technical teams
Anticipated Timeline for Completion: September 2024
Additional Notes/Commentary: UNENE created a submission to the Engineering GCPC at McMaster to propose the transition of one pilot course, UN802 Nuclear Reactor Physics, to online delivery. The submission outlined the background and rationale for the change, the current practice and proposed changes for delivery, a delivery model and scope of work to be completed in preparation for online delivery by the course professors. Drs. Rouben and Nichita, the course professors in question, provided input and review for the proposal, and agreed to the scope of work. UNENE additionally sought input from academic partners within the Department of Engineering Physics, the Faculty of Engineering (Associate Dean Michael Thompson), online education experts within the MacPherson Institute, and more.

This proposal was also reviewed by the UNENE EAC Subcommittee and EAC, prior to submission at the November 2023 meeting of the GCPC, where Dr. Popov also attended to present a summary of the proposal to committee members.

The proposal was approved at the GCPC and will continue for further approval within McMaster, culminating in a change to the graduate calendar before the 2024-2025 academic year.

Progress (check one)

☒ Completed

☐ In Progress

☐ Other (please explain)

Department's Comments:

Drs. Rouben and Nichita produced a report summarizing findings from their research into online graduate course delivery. Their report included recommendations and options for online lecturing tools, learning management systems, student engagement, student assessment, equipment for students and instructors, and more.

The report was shared with the UNENE Education Team in Summer 2024 and brought to the EAC Subcommittee. No concerns were found with the report contents; Drs. Rouben and Nichita additionally provided their specific plan for implementation of recommendations for UN802 online delivery, which were deemed appropriate and in line with the proposed online delivery model. These specific implementations were included in the UN802 course outline prepared for Fall 2024, to inform students of expected changes to course deliveries.

UNENE supported Drs. Rouben and Nichita in preparations for online delivery of UN802 by assisting with evaluation of learning management systems (LMS). CANVAS by Instructure was implemented in August 2024.

UNENE opened registration for UN802 delivery in Fall 2024 and communicated delivery expectations with students. Due to a high influx of new students, UNENE modified delivery to include two concurrent, separate course sections, each taught entirely by one of Dr. Rouben or Dr. Nichita. Students continue to register in each section, and current expected registration maximums are around 20 students in each course section.

UNENE will continue with the hybrid program delivery in the academic 2025-2026 following academic years.

Dean's Comments:

The Faculty respects and supports the programs' careful consideration of delivery method including the described review of outcomes of the online course offered. We are available to support the program if other courses would like to be changed to online/hybrid delivery.

QAC Comments (to be filled in by Quality Assurance Committee):

See above

Recommendation: Complete future M.Eng. and Diploma reviews simultaneously.
Responsibility for Implementation: UNENE Education Program Director
Anticipated Timeline for Completion: 2027-2028
Additional Notes/Commentary:
Progress (check one) ☐ Completed X In Progress ☐ Other (please explain)
Department's Comments: UNENE will coordinate with McMaster University to complete future IQAP reviews for the M.Eng. and Diploma programs simultaneously. Implementation of this action will be the responsibility of the Education Program Director at the time of the next reviews, anticipated to be earliest 2027-2028, with assistance from the UNENE Administrator.
Dean's Comments: We will be available to support with this as the program sees fit.
QAC Comments (to be filled in by Quality Assurance Committee): See above