

Program Progress Report

Institutional Quality Assurance Program (IQAP) Review

University Network of Excellence in Nuclear Engineering (UNENE) –

Master of Engineering in Nuclear Engineering

Date of Site Visit: April 2021

**Progress Report Prepared by: Dr. Nikola Popov, UNENE Education Program Director;
Ms. Raluca Petria, UNENE Administrator**

Recommendation: Work with University office of Diversity and Inclusion to evaluate accessibility of the courses.
Responsibility for Implementation: Allan Lew, UNENE Operation Director
Anticipated Timeline for Completion: September 2023
Additional Notes/Commentary: <u>Action 1.1 – In Progress; anticipated timeline September 2023</u> UNENE will gather information from member organizations regarding EDI practices and hold a workshop with the objective to identify how to adopt and apply some of the recommended guidelines and activities specific to nuclear education and research and to UNENE. Progress: UNENE has transferred Responsibility for Implementation Mr. Allan Lew, UNENE Operation Director and Ms. Raluca Petria, new Administrative Assistant. On November 1, 2022, Ms. Petria has completed a McMaster-specific EDI Training session as a starting point for addressing this action. Current Status and Plan: Ms. Petria will gather EDI information from McMaster, partner universities, and major affiliate industry partners (if available). The information will be compiled into a summary report for the UNENE Program Director and UNENE Governance. UNENE will evaluate specific next steps and practices to implement for improvement of EDI practices, using this EDI Report document as a starting position. Mr. Lew will organize meetings with the EDI offices at McMaster and other universities to discuss their practices and experience in this area.
Progress (check one) <input type="checkbox"/> Completed <input checked="" type="checkbox"/> In Progress <input type="checkbox"/> Other (please explain)
Department's Comments:

Dean's Comments:

As stated in our earlier reply to the review, the Faculty of Engineering is very supportive of meaningful advancement in EDI across our programs but we maintain that we are largely disappointed that the IQAP reviewers choose to pursue an agenda on this issue without quantifiable information. We consider the approach noted by the program in their recent progress report for better integration of EDI principles into their procedures and policies, to being well thought through, built with consideration for consultation and fairly balanced. The guidance of McMaster's Equity and Inclusion Office will be very helpful on this matter, but pulling in EDI practices from the industrial members means that the final policies created will be implementable without creating an unmanageable disconnect between the program and the source of its students.

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

QAC reviewed this report and had no further comments or concerns

Recommendation: Evaluate the pedagogy used, especially the weekend long, lecture focused course delivery.

Responsibility for Implementation: Dr. Nikola Popov, with aid from UNENE Course Instructors

Anticipated Timeline for Completion:
March 2023 (final), some actions already completed.

Additional Notes/Commentary:

Action 2.1 – Completed May 2022

The current four-alternate weekend format is the result of experimentation early in the program. The current format, while not as good as a 13-week semester, is a compromise to accommodate working students. We have not identified anything better that fits our constraints. UNENE will further evaluate options in cooperation with stakeholders and propose changes if a better model is identified.

Progress:

UNENE implemented an 8-day format over 3 months for courses UN804 and UN803. Students' feedback indicated agreement with the above change, at least for the online delivery.

However, as UNENE courses moved back to delivery in person, schedule was reversed back to the 4 weekends format to accommodate student needs; students have indicated that travel to in-person courses every weekend largely would be negative and a deterrent to participating in courses.

Current Status: Action Completed May 2022

Action 2.2 – In progress; anticipated timeline March 2023

Action UNENE will meet with the MacPherson Institute at McMaster University and seek their advice about making our pedagogy more effective. The Teaching and Learning Centre at Ontario Tech. University fills a similar role, and might also assist us, especially for digital classrooms. Assuming they give useful guidance, we will pilot the ideas in one or more selected courses in 2022/2023, and then decide on broader implementation.

Progress:

Several meetings held with representatives of the MacPherson Institute to discuss some elements and new approaches. Some suggestions and guidance taken into consideration in UN804 and UN803, such as to take a step-by-step approach, and to consider previous experience with new approaches where available.

After initial meetings, no further feedback was received from MacPherson.

Current Status:

Final assessment of implementation is in progress. Once finished, this action will be complete.

Action 2.3 – Completed August 2022

We will also **pilot a “flipped classroom”** for one or two selected topics in one of our 2021/2022 courses. The four-weekend format of UNENE courses poses a special challenge in implementing this approach (for example it cannot be sprung on students at the first weekend), so the pilot will tell us what does and does not work.

Progress:

Modifications to the lecture format in the UN804 course were introduced, such as previous lecture students’ recap at every follow-up lecture, students’ pre-reading of lectures and a summary before every lecture, etc. Feedback from students indicated general agreement. This approach was also partially implemented in UN803 as well. Students overall indicated positive feedback for flipped classroom model and supported further implementation to other UNENE courses.

UNENE will continue to implement aspects of the flipped model classroom, fully or partially, in future courses, as appropriate.

Current Status: Action Completed August 2022

Progress (check one)

☐ Completed – May 2022

X In Progress

☐ Other (please explain)

Department’s Comments:



Dean's Comments:

We can see some of the lesson learned recently that arose around virtual delivery, can be beneficial to UNENE and its considered improvement to course pedagogy. The Dean's Office has been assisting the program with changing their delivery mode, mostly working between the program and our legal counsel on matters of national security and communication of sensitive technology to sanctioned regions in the world. Since we are only one partner in a consortium of institutions, this change will happen slowly but we see a solid path and everyone seems to be looking at the change favourably.

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

See above

Recommendation: Institute regular, structured advising for students in program.

Responsibility for Implementation: Dr. Nikola Popov

Anticipated Timeline for Completion:
May 2022 (completed)

Additional Notes/Commentary:

Action 3.1 – Completed May 2022

UNENE already regularly requests student feedback on the completed courses, and input in scheduling future courses. Also, UNENE conducts discussions with student groups when required. UNENE will introduce regular student meetings.

Progress:

Dr. Popov completed group meetings with students at the start of every course offered and before refresher courses, to promote student communication and open channels for student feedback. Dr. Popov will continue to organize group meetings going forward.

Current Status: Action completed May 2022

Action 3.2 – Completed May 2022

UNENE will introduce regular student meetings with each student individually to discuss student progress, needs and plans.

Progress:

Dr. Popov completed one-to-one advisory meetings with all students and collected student feedback to be summarized and presented to the Education Advisory Committee of UNENE (the EAC). This feedback was presented at an EAC meeting in May 2022.

Current Status: Action Completed May 2022

Progress (check one)

☒ Completed

☐ In Progress

☐ Other (please explain)

Department's Comments:

Dean's Comments:

Considering the mobile nature of this program related to both the broad range of sites of employment where the students are coming from and the varied sites where courses are delivered, the implementation of a group meeting makes sense. The one-on-one meetings will ensure that students not presently taking a course are also receiving valuable advice.

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

See above

Recommendation: Explore increasing target audience within the nuclear industry and diversifying course offerings.

Responsibility for Implementation: UNENE EAC Subcommittee; Allan Lew; Jerry Hopwood

Anticipated Timeline for Completion:
September 2023

Additional Notes/Commentary:

Action 4.1 – In progress; anticipated timeline September 2023

UNENE already has contacts with industry partners in terms of finding ways to increase student admissions. UNENE will continue to hold meetings with the senior management from industry with the intent to find ways for increased student population.

Progress:

EAC Subcommittee was assigned an action to discuss this issue and create a more thorough plan of action.

Current Status:

EAC Subcommittee to call a meeting with industry representatives in EAC and RAC to discuss options and receive feedback from industry on perceived ways to reach students, as a starting point to develop a path forward.

Action 4.2 – In progress; anticipated timeline September 2023

UNENE will explore possibilities with the CNS, OCNI and other industry organizations to organize webinars and seminars as part of the outreach to employees in various industry organizations.

Progress:

Initial discussions have been held within UNENE Governance to identify specific next steps and outreach opportunities.

Current plan:

UNENE R&D Workshop in December 2022 will be used as a potential outreach opportunity through collaboration with key partners such as OPG, BP, CNSC, and CNL. Further, Jerry Hopwood will arrange meetings with CNS and OCNI in the new year to discuss outreach opportunities within their organization. Also, part of this action will be outreach to western Canada, along with performing Needs Assessment in Ontario and other provinces.

Action 4.3 – In progress; anticipated timeline June 2023

UNENE will explore ways to use graduate students and alumni students as “ambassadors” of UNENE in their organizations and will explore objectives and methods to be used for increasing awareness of employees with the UNENE M.Eng. program.

Progress:

Dr. Popov discussed this opportunity with a few UNENE alumni and received indication of interest for the role of UNENE student ambassador in their home organizations.

Current plan:

Dr. Popov will schedule a meeting with the interested candidates to discuss specific approaches, goals, and priorities. Dr. Popov will also identify at least one potential candidate at each major UNENE industry partner, and a preliminary contact/interest email will be sent.

Progress (check one)

☐ Completed

X In Progress

☐ Other (please explain)

Department's Comments:

Dean's Comments:

We are very supportive of growth in enrollment and will remain closely involved as that strategy evolves. We do appreciate though that national security issues must remain a factor in how this strategy is implemented, especially if the decision involves broadening the program to international students (with virtual attendance from their country of origin).

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

See above

Recommendation: Create stronger ties to the rest of the university, to better use university resources.

Responsibility for Implementation: Dr. Nikola Popov; Raluca Petria

Anticipated Timeline for Completion:
June 2023

Additional Notes/Commentary:

Action 5.1 – In progress; anticipated timeline June 2023

UNENE will organize regular annual meetings with their university colleagues at McMaster SGS as well their partner universities to communicate and share developments on resources, policies, procedures such as academic integrity, grading tools, petitions, and admissions processes.

Progress:

Ms. Petria, the new administrative assistant, has met with members of the Engineering Physics administrative team within McMaster and has been introduced virtually to the administrative contacts at other partner universities.

Current plan:

Ms. Petria will make it an ongoing priority to maintain regular, timely, and open communication with all university contacts.

With respect to McMaster, Ms. Petria will ensure weekly communication with the Engineering Physics administrative team at McMaster. This will be done either in person on days Ms. Petria is in the UNENE office, or online via email and Zoom/Teams calls. Ms. Petria will take part in other McMaster Graduate administrative meetings, including but not limited to the Graduate Administrators monthly town hall, and School of Graduate Studies (SGS) training meetings.

With respect to other partner universities, Ms. Petria will ensure ongoing communication as needed, pertaining to student and administrative needs. In addition to as-needed communication, Ms. Petria will reach out in advance of all courses start dates and in advance of new academic year start dates, to gather student registration for upcoming courses, get updates regarding student enrolment, and provide updates on UNENE activities.

Ms. Petria will additionally organize semi-annual individual meetings between UNENE and the administrators at partner universities, to be attended by herself, the UNENE Program Director, UNENE President, and optionally UNENE Secretary/Treasurer. One of these semi-annual meetings will be virtual, while the other will, with time and with resources permitting, be in person on-site at partner institutions.

Progress (check one)

☐ Completed

X In Progress

☐ Other (please explain)

Department's Comments:

Dean's Comments:

The Dean's Office maintains regular conversations with the program leaders and shall provide our support when it comes to Ms. Petria should UNENE needs our resources.

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

See above

Recommendation: Develop mechanism for maintaining institutional knowledge about the program.

Responsibility for Implementation: Dr. Nikola Popov; Raluca Petria

Anticipated Timeline for Completion: Variable; individual timelines indicated below

Additional Notes/Commentary:

Action 6.1 – anticipated timeline April 2023

UNENE officers with M.Eng. program responsibilities to compile the UNENE program handbook and prepare a description of their on-going duties and activities regarding the program, to allow transfer of duties if needed.

Progress:

UNENE officers have compiled and shared the UNENE student handbook with McMaster administration. The handbook will also be posted on the UNENE website, accessible to students. The student handbook helps students understand the UNENE program logistics and rules and provides a source of university links for obtaining further information. The student handbook will be

Current Plan:

Ms. Petria will facilitate collection of information from UNENE Officers regarding their scope of work, roles, and responsibilities with respect to the UNENE M.Eng. program and will be compiled into UNENE Officers Handbook. This document will be stored internally on the UNENE website administration area. Administrator responsibilities have already been compiled in a preliminary draft.

Action 6.2 – In progress; anticipated timeline April 2023

UNENE to prepare archive materials of courses delivered in the past few years, to provide basis and preparation material for new instructor familiarization in future.

Progress:

Ms. Petria, with the help of previous UNENE administrators, has begun collecting course recordings and other materials (exams, tests, etc.) from past few years.

Current Plan:

Once complete, course recordings will be compiled into an archive of “Course Offerings – Most Recent Versions” containing the most recent course materials as a “snapshot” of the most recent version that any course has been offered. With instructor permission, this archive will be shared with present UNENE instructors and with incoming UNENE instructors, to allow not only preservation of institutional knowledge but also smoother transitions should any new professors begin teaching UNENE courses.

UNENE will take an action to review the status of all UNENE instructors and ensure that attrition by retirement or other means is managed in timely fashion.

Progress (check one)

☐ Completed

X In Progress

☐ Other (please explain)

Department’s Comments:

Dean’s Comments:

We worked closely with the program in developing their first handbook, giving them insights from other programs and reviewing their revisions until a comprehensive document was finalized. We are happy to see the program embracing the concepts of universal design, since it helps all learners find the right format for the taught lessons.

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

See above