2021 External Review Response and Status of Recommendations

Recommendations by the External Review Panel of the MSc. Cybersecurity Program

The expert review panel hired by New York Institute of Technology – Vancouver to review its MSc Cybersecurity program met on 15 June 2021 between 12:30 pm and 4:30 pm to review the program. The panel submitted its final report on July 15, 2021.

The report determined that the program met the standards included in the Degree Program Review Criteria and Guidelines published by the Ministry of Advanced Education, Skills and Training. They also, provided a list of recommendations for adoption to improve the quality of the program.

These recommendations are listed below, as well as our comments and the actions we have taken to address them.

Recommendations:

1. To ensure continuous commitment by full-time faculty, the Program may consider offering tenure-track or tenured appointments.

While NYIT does offer tenured appointments to New York based faculty, the granting of tenure requires faculty to produce a substantial body of research. Vancouver based faculty do not have access to NSERC or other major research grant sources making it difficult for them to meet the NYIT standard. In addition, the Vancouver campus is a teaching focused institution with a heavier teaching load than a research focused institution. To address the issue of faculty commitment, NYIT has recently changed from rolling five year appointment contracts to continuous appointments. We believe the continuous contracts adequately addresses the issue of faculty commitment.

2. While the Program is connected with the industry, industrial relations may be further enhanced by establishing an alumni body and have regular events involving alumni.

Vancouver lost its Associate Director of Alumni Affairs during downsizing required to address pandemic related budget issues. The New York based Director of Alumni Relations assumed support of our local alumni. The alumni association had their first meeting after over a year-long gap on August 22nd 2021 and is now meeting monthly. The Alumni Association is currently working with Career Services to plan an alumni networking event, and an employer job fair for the spring.

We will be requesting permission to fill the Alumni position again in the coming budget year as the after effects of the pandemic subside. In the meantime, we have established LinkedIn groups that help us keep in touch with some of our alumni.

3. Consider creating a co-op officer position to increase internship opportunities for students

Vancouver's new Associate Director of Career Services has assumed full responsibility for internship and co-op positions which should assist in more students gaining experiential learning opportunities.

In addition, we have recently created connections with Fortinet and other companies who are eager to hire our students for co-op and internship positions.

4. Enrich training tools in the lab and consider hiring a full-time lab technician.

The Covid-19 pandemic has shown us that is possible to teach our students with our physical labs. Virtual machines and containers that are run on the student's personal machines are just as effective. We plan to continue along this line. We will be working to ensure that all students in the program have a personal computer that meets the minimum requirement to run the virtual machines for the labs.

Since the fall of 2021, we have employed a full-time IT Technician that manages our labs and all the IT equipment on campus.

5. Consider offering scholarships to attract more top students.

The average GPA upon admission for all students admitted into the Cybersecurity program is 3.2. We are already attracting some very high-level students and do not believe we need to do more at this time.

6. Consider offering release time for research active faculty members.

New York Tech – Vancouver is a primarily teaching institution. We will consider on a case-by-case basis release time for research active faculty members.

7. We recognize that the NYIT administration has been meeting with NSERC for the eligibility of their faculty members to apply to the grant competitions. We encourage them to continue to engage government research grant offices to gain the eligibility of their faculty members for federal grant competitions.

NSERC (and Tri-council) have since developed a set of criteria that institutions that qualify for its grants must meet. New York Tech – Vancouver does not meet the criteria, primarily because it is chartered in the United States and not Canada.

8. Consider adding courses on computer programing and software development

Students in the program have shown little interest in computer programming and software development in the past. Our Secure Software Engineering course has had to be cancelled many times in the past due to a lack of interest. We will look at promoting this course within the student body, if there is interest, we will introduce other programming and software development electives.

9. Consider offering courses such as mobile operating systems security, organizational culture and cybersecurity, and ransomware.

We will be incorporating these topics into the curriculum. We do not think that stand alone courses are necessary. The topics can be incorporated into the following courses and should be completed by Fall 2021:

- Mobile operating systems security – CSCI 620 (Operating Systems Security)
- Organizational culture and cybersecurity – INCS 618 (Risk Management and Legal Issues)
- Ransomware – INCS 745 (Intrusion Detection and Hacker Exploits)

10. Incorporate cybersecurity related tools and techniques in the data mining course.

The course is an elective and is therefore not offered during all semesters. It is scheduled to be offered again in fall 2022. The course content will be updated to reflect this recommendation by its next offering.

11. Consider adding a directed studies option for classes without the minimum number of students, which would otherwise be canceled.

This may not be possible as the classes in the program without the minimum number of students are usually the 500-level program prerequisites. These courses are compulsory and must be reflected in the student's transcripts as completed. In the future, we will recommend instructors of such classes to change the course delivery format to be in line with a directed study when the class size falls below the minimum requirement.

12 Consider adopting newer editions of textbooks and course materials for subjects that have been updated frequently in new technologies.

This was completed by September 2021. All of our faculty have updated the recommended texts of the courses they teach with their latest editions. This was verified by the Assistant Dean of program. In the future, faculty members would be reminded on a regular basis to update their recommended text(s).