

FINAL ASSESSMENT REPORT
Evaluation of Graduate Programs
Digital Transformation and Innovation
Faculty of Engineering
Telfer School of Management
Faculty of Arts
Cyclical Review Period: 2021-2022
Date: February 1, 2023

I. Programs

- Master of Digital Transformation and Innovation (MDTI)
- Master of Science Digital Transformation and Innovation (MSc)
- Doctorate in Philosophy Digital Transformation and Innovation (PhD)

II. Evaluation Process (Outline of the visit)

- The Final Assessment Report for the evaluation of the aforementioned programs is based on the following documents: (a) the self-study report produced by the leadership of the programs, (b) the report of the external evaluation following the virtual visit, and (c) the comments of the Deans, Jacques Beauvais (Engineering), Stéphane Brutus (Telfer), and Kevin Kee (Arts), and the comments from leadership of the programs, Daniel Amyot (Engineering), Bijan Raahemi (Telfer), and Rocci Luppicini (Arts).
- The visit was conducted virtually from February 7-8, 2022. The reviewers were provided a comprehensive self-study brief that had been previously presented and discussed at the Program Committees on June 15, 2021.
- During those two days, ten interview sessions were held with the following groups and individuals: 1) Jacques Beauvais, Dean, Engineering; 2) Stéphane Brutus, Dean, Telfer; 3) Kevin Kee, Dean, Arts; 4) Claire Turenne-Sjolander, Vice-Provost Graduate and Postdoctoral Studies; 5) Sylvie Lamoureux, Associate Vice-Provost Graduate and Postdoctoral Studies; 6) Bijan Raahemi, Director, Telfer; 7) Daniel Amyot, Director, Engineering; 8) Rocci Luppicini, Director, Arts; 9) Liam Peyton, Vice-Dean Graduate Studies, Engineering; 10) fifteen students with eight active and seven alumni; 11) twelve Professors (six full-time and six part-time); 12) nine support staff (facilities, three graduate office, and co-op).

III. Summary of Reports on the Quality of Programs¹

EMPHASIZING THE STRENGTHS AND IDENTIFYING CHALLENGES

Strengths

- The programs are interesting, and they match society needs.
- Current and graduate students appreciated the program. They appreciated the content and the variety of the courses, the applied character of the courses, and the links with the industry.
- The projects offered to the students were seen as relevant and interesting.
- The coop component of the program is much appreciated by the students.
- The students also appreciate the diversity of the students' background, indicating that it enriches their learning experience.
- The employers were extremely positive when evaluating the students they employed through the coop program.
- The faculty members showed strong engagement toward the programs.

Challenges

- The programs should make more clear links between the learning objectives and the university strategic vision.
- The learning outcomes do not reflect all components of the programs. They should be revised to include explicitly the creative and strategic component of digital transformation and innovation.
- The course offering should be modified in order to increase the number of optional courses.
- Because students are attached to the faculty of their supervisor, they might not be aware of opportunities and projects in other faculties, and they might not be offered the same resources.
- University policies, systems, and practises are not suited to such innovative programs, particularly due to the interdisciplinary/multi-faculty component and academic-professional duality.

IV. Program Improvement²

The programs under evaluation are in conformity with the standards of the discipline. The following recommendations aim at maintaining or increasing the level of quality already achieved by the programs.

The numbering of the recommendations follows that of the external reviewers' report.

Recommendation 1: Explicitly link the program with the university strategic vision.

¹ Based on excerpt, often verbatim, from the self-study, the external evaluation report, and the programs and decanal responses.

² Based on the External Evaluators Report.

Recommendation 2: Conduct a vision exercise.

Recommendation 3: Revise learning outcomes with creative and strategic components of DTI.

Recommendation 4: Offer professional development to DTI students.

Recommendation 5: Increase optional courses offering.

Recommendation 6: Provide a calendar of course offering over a few years.

Recommendation 7: Increase the number of courses offered in summer.

Recommendation 8: Clarify roles and responsibilities for DTI PhD students and their supervisors.

Recommendation 9: Make visible all the opportunities offered from all faculties to all DTI students.

Recommendation 10: Offer same faculty benefits to all DTI students.

Recommendation 11: Actively nurture the relationships with alumni.

V. List of courses not offered for more than three years and the reasons

All of the courses have been offered at least once in the last three years.

VI. Conclusion

The graduate programs in Digital Transformation and Innovation are well-run academic programs that offer a high quality of graduate training in a variety of digital transformation fields. Among the strengths noted by the external reviewers is that the program is “interesting, matching society needs, and much appreciated by the students (current and graduated)”. Suggestions for improvement are largely constructive in nature that is the comments focused on improving an already successful program, rather than indicating that fundamental changes are required.

In light of this positive assessment, the committee members would like to thank all participants for the evaluation of the programs. They congratulate the unit on the rigour of the work accomplished and on the quality of the self-study report, as well as that of the report produced by the external reviewers.

Schedule and Timelines

A progress report that outlines the completed actions and subsequent results will be submitted to the evaluation committee on December 15, 2024.

The next cyclical review will take place in 2028-2029. The self-study brief must be submitted no later than June 15, 2028.

Unit Response and Action Plan

Faculty:

- Faculty of Arts, Faculty of Engineering, Telfer School of Management

Programs evaluated:

- Master of Digital Transformation and Innovation
- Master of Science Digital Transformation and Innovation
- Doctorate in Philosophy Digital Transformation and Innovation

Cyclical review period:

- 2021-2022

Date:

- August 12, 2022

General comments:

On March 18, 2022, the Digital Transformation and Innovation (DTI) graduate programs (MDTI, MSc DTI, and PhD) were made aware of the External Review Report produced in the context of the cyclical program evaluation. We were extremely pleased with the positive evaluation of our graduate programs. Given that the DTI graduate program have committed to providing an outstanding training and research experience, we were gratified to see that the external reviewers found that “the program team should be commended for putting in place a program that is interesting, matching society needs, and much appreciated by the students (current and graduated)”, that “the program delivers on most of its promises to the students”, and that “the employers were extremely positive when evaluating the students they employed through the coop program”. The report makes eleven recommendations, of which three are considered high priority. We take all the recommendations seriously and feel confident that by addressing them, our graduate program will be even stronger. The recommendations and our response, produced jointly by the unit and the Faculty, are included below.

Recommendation 1: Explicitly link the program with the university strategic vision

Unit response: Agreed to unconditionally. As observed by the reviewers, we have these links documented in our report. In addition to updating the official calendar, we will also request an update to the dtiuottawa.ca Web site maintained by the DTI Student Association.

Decanal response: Agree with the unit response in making the changes that will highlight the links with the university strategic vision.

Priority Level*	Actions to be undertaken	Assigned to	Timeline	Curriculum change?
1	Update the DTI program description on the university calendar (website) to refer to the University strategic vision in the program description.	DTI Graduate Directors	May 2023	No
1	Update the DTI program description on dtiuottawa.ca website to refer to the University strategic vision in the program description.	DTI Student Association	May 2023	No

* PRIORITY LEVEL: 1. URGENT-IMMEDIATE ACTION REQUIRED 2. IMPORTANT-ACTION REQUIRED WITHIN 18 MONTHS (MAXIMUM) 3. ADVISED: DEVELOPMENT AND STRATEGY-ACTION TO BE DISCUSSED AND MUST BE IN PLACE BY MID-CYCLE (WITHIN 4 YEARS)

Recommendation 2: Conduct a vision exercise

Unit response: Agreed to unconditionally. There is already a retreat planned at the end of May at the level of the School of Engineering Design and Teaching Innovation (SEDTI), where the DTI programs are hosted. However, a DTI-specific retreat will be organized this summer as well. The many points raised by the examiners (including the future of the programs in terms of growth, and the “dual” nature of the programs in terms of their academic and professional objectives) will provide important starting points for this discussion. Similar discussions will also be organized with the DTI students in September (when students are back) in the form of focus groups and/or lunch & learn sessions.

Decanal response: Agree with the unit response in terms of a visioning exercise. The dual nature of the programs is an asset, as well as its multidisciplinary nature, and these should form the basis of the future development of the program.

Priority Level*	Actions to be undertaken	Assigned to	Timeline	Curriculum change?
1	Host a retreat of members from the three Faculties involved in the DTI programs (Arts, Engineering and Telfer) to discuss and establish a shared vision of the multi-disciplinary DTI programs.	DTI Graduate Directors	June 2023	No
2	Collaborate with the DTI Student Association to conduct focus groups or lunch & learn sessions with DTI students to discuss the student vision of the multi-disciplinary DTI programs.	DTI Graduate Directors, DTI Student Association	June 2023	No

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Recommendation 3: Revise learning outcomes with creative and strategic components of DTI

Unit response: Agreed to unconditionally. The current learning objectives were inherited from the previous E-Business programs and do not reflect well the new Innovation objective that came with the DTI rebranding. This will not only be fixed, but also revisited during the vision retreat and student focus groups.

Decanal response Agree with the unit response. The revised learning outcomes should better reflect the evolution of the program since its revitalization as well as its strong alignment with the needs of the job market.

Priority Level*	Actions to be undertaken	Assigned to	Timeline	Curriculum change?
1	Revise learning outcomes according to the recommendation of the “vision retreat” (expected to be held by June 2023), and reflect the changes in the course outlines.	DTI Graduate Directors	July 2023	No
2	Revise learning outcomes according to the recommendation of student focus groups (tentatively held by June 2023)	DTI Graduate Directors, DTI Student Association	July 2023	No

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Recommendation 4: Offer professional development to DTI students				
Unit response: Agreed to unconditionally. There are indeed several opportunities that currently exist with Telfer, various research institutes, and even the CO-OP office, that can likely be turned into proper services for all DTI students.				
Decanal response Agree with the unit response. In addition, there are a growing number of professional skills development activities being developed within the context of the launch of the School of Engineering Design and Teaching Innovation for the revitalization of the Master of Engineering programs. Links could be established with these opportunities, led by the students and professors.				
Priority Level*	Actions to be undertaken	Assigned to	Timeline	Curriculum change?
2	Investigate with Telfer the DTI students' access to the services offered by the Telfer career centre, as well as the Telfer Management Library. Discuss the fee structure with the DTI student association.	DTI Graduate Directors (led by Telfer Co-Director), DTI Student Association	August 2023	No
2	Investigate DTI students' access to opportunities of activities and events offered by relevant Institutes and Research Centres within the University.	DTI Graduate Directors	August 2023	No
2	Investigate with the CO-OP office the DTI students' access to the new professional development modules that have been for CO-OP students, and assess whether these modules could also be made accessible to non-CO-OP DTI students.	DTI Graduate Directors, CO-OP office	August 2023	No

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Recommendation 5: Increase optional courses offering

Unit response: Agreed to unconditionally. There are new micro-programs available or under development at the University of Ottawa and we have the opportunity to add them to the course offering of DTI students (especially at the Master's level). The micro-programs from Engineering on Applied AI and cybersecurity will soon be offered to DTI students.

Decanal response Agree with the unit response.

Priority Level*	Actions to be undertaken	Assigned to	Timeline	Curriculum change?
1	Bring minor motion to clean-up the list of elective courses that have not been offered in the past 4 years, or that are unlikely to be offered soon in the future.	DTI Graduate Directors	May 2023	Yes
2	Bring minor motion to include additional optional courses from the ADM graduate programs, especially new/revised courses offered in Telfer microprograms.	DTI Graduate Directors (led by Telfer Co-Director)	May 2023	Yes
2	Investigate additional optional courses from the ARTS graduate programs, especially new/revised courses offered in Communications and Information Studies.	DTI Graduate Directors (led by Arts Co-Director)	May 2023	Yes

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Recommendation 6: Provide a calendar of course offering over a few years

Unit response: Agreed to in principle. At the University of Ottawa, course load for professors and course offering are planned annually (for all programs). For some elective courses that are not always offered, it might be possible to improve the planning over two years, so that we alternate the courses being offered while enabling students to take them all during their two-year program.

Decanal response Agree in principle, subject to the caveat indicated regarding the course load planning. Faculties could explore the possibility of additional collaborative processes to increase the planning of courses for the students.

Priority Level*	Actions to be undertaken	Assigned to	Timeline	Curriculum change?
2	Plan course offering two years in advance, especially elective courses that could be offered every two years.	DTI Graduate Directors	August 2023	No

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Recommendation 7: Increase the number of courses offered in summer

Unit response: Agreed in principle, subject to budget constraints related to the offering of extra summer courses. The program currently offers 3 to 9 units during Spring/Summer semester, including elective courses in GNG, CSI, and one DTI. We will plan to offer more DTI code courses in spring/summer semester.

Decanal response Agree in principle, subject to budget constraints related to the offering of extra summer courses.

Priority Level*	Actions to be undertaken	Assigned to	Timeline	Curriculum change?
2	Add one (or maybe two) DTI courses to the list of course offering in summer.	DTI Graduate Directors	Winter 2023	No
2	Add one (or maybe two) DTI/CMN cross listed courses in ARTS to the list of course offering in summer	DTI Graduate Directors (led by Arts Co-Director)	Winter 2023	No

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Recommendation 8: Clarify roles and responsibilities for DTI PhD students and their supervisors

Unit response: Agreed to unconditionally. We had a good experience with providing the DTI Masters students with a document outlining the guidelines of how to do a project or a thesis in our Masters programs. The guidelines document is shared with the students during the welcome/orientation sessions (that are held twice per year), and also, posted on the DTI Students Association website. Similarly, we will create a booklet including guidelines for PhD students and their supervisors. The booklet will be shared with the students in the PhD seminar courses (compulsory courses for all DTI PhD students), as well as in orientation sessions.

Decanal response Agree with the unit response.

Priority Level*	Actions to be undertaken	Assigned to	Timeline	Curriculum change?
2	Create the DTI booklet including guidelines for PhD students and their supervisors. Present the guidelines & booklet to the DTI students in (a) orientation sessions; and (b) the PhD seminar course.	DTI Graduate Directors	Summer 2023	No
3	Work with DTI student association to conduct focus groups with DTI students to discuss student supervisor experiences and expectations.	DTI Graduate Directors DTI Students' Association	Summer 2023	No
3	Dedicate time during PhD Seminars 8101/8102 to focus on roles and responsibilities for DTI PhD students and their supervisors	DTI Graduate Directors	Fall 2022 and Winter 2023	No

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Recommendation 9: Make visible all the opportunities offered, from all faculties, to all DTI students

Unit response: Agreed to unconditionally. While each participating faculty makes announcements to its graduate students regarding workshops, seminars, scholarships, TA opportunities, etc., such announcements might not reach all DTI students. The DTI students mailing list is already available. We will coordinate with the Grad office of all 3 participating faculties to include the DTI students mailing address in their regular announcements. Currently, the DTI students mailing list is DL-ENG-DTIGRADS@uottawa.ca.

Decanal response Agree with the unit response.

Priority Level*	Actions to be undertaken	Assigned to	Timeline	Curriculum change?
2	Coordinate with the Graduate office of the three faculties (Arts, Engineering, Telfer) to include the DTI students distribution mailing list in their announcements regarding workshops, seminars, scholarships, TA opportunities , etc. The current DTI students mailing list is DL-ENG-DTIGRADS@uottawa.ca .	DTI Graduate Directors	Summer 2022	No

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Recommendation 10: Offer same faculty benefits to all DTI students				
Unit response: Agreed to unconditionally. Please see our responses and action plans mentioned for Recommendation 4, and Recommendation 9.				
Decanal response Agree with unit response. Since November, 2022, the DTI Students Association has a dedicated space in the Desmarais Building (DMS 8157).				
Priority Level*	Actions to be undertaken	Assigned to	Timeline	Curriculum change?
3	Please see our action plans mentioned for Recommendation 4, and Recommendation 9.	DTI Graduate Directors	Summer 2023	
3	Reinforce in DTI executive and planning committee need to offer same financial and resource faculty benefits to all DTI students.	DTI Graduate Directors	Summer 2023	

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Recommendation 11: Actively nurture the relationships with alumni

Unit response: Agreed to unconditionally. We invite alumni to the DTI orientation/welcome sessions. This is currently done through the professor’s individual contacts with alumni, or through the DTI Students Association that is in contacts with alumni through the Association’s Facebook and LinkedIn accounts. We need to leverage on all these contacts to create an updated (voluntarily) list of alumni at the DTI Grad office. We also need to nurture and strengthen the relationships that the DTI Students Association has with alumni.

Decanal response Agree with unit response. The engagement of alumni not only in special events but in courses too has been facilitated with the tools now easily accessible to professors for remote participation. Increasing the strength of the alumni network is a priority of the Faculty of Engineering since the beginning of 2022 and we will ensure that DTI graduates are highlighted for each action being taken. In Arts, DTI alumni will become key participants in activities relating to Digital Cultures, one of the Faculty’s priority areas. In Telfer, will strengthen its relationship with DTI alumni by including the DTI alumni in Telfer communications regarding the invitations, events, and news related to Telfer-Alumni. A LinkedIn group was also created for DTI alumni and students (with 150+ members) to enable exchanges and job-related postings.

Priority Level*	Actions to be undertaken	Assigned to	Timeline	Curriculum change?
3	Invite Alumni to DTI special events (talks, seminars, orientation sessions) Keep an updated (voluntarily) list of alumni at the DTI Grad office Nurture and strengthen the relationships with the DTI Students Association	External Communications/Alumni Relation offices in Arts, Engineering and Telfer	Summer 2023	No
4	Build a stronger network of alumni via improved communication and increased participatory opportunities including orientation presentations and increase alumni content on DTI website	External Communications/Alumni Relation offices in Arts, Engineering and Telfer	Summer 2023	No
4	Create a LinkedIn group for DTI alumni and students	DTI Graduate Directors	Winter 2023	No

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