

ACADEMIC COUNCIL REPORT

ACTION REQUESTED:

Recommendation
Decision
Discussion/Direction
Information

DATE: 24 October 2023

FROM: Undergraduate Studies Committee

SUBJECT: Cyclical Program Review 18-Month Follow-up –
Bachelor of Engineering (Hons), Software Engineering

COMMITTEE MANDATE:

In accordance with Article 8 of the Ontario Tech University Institutional Quality Assurance Process (IQAP) Cyclical Review and Auditing Procedures, eighteen months following the completion of a program review the Dean will prepare a brief follow up report and “A summary of the progress report will be approved by the appropriate standing committee of Academic Council”. This summary report will be reported to Academic Council for information and subsequently posted to the Ontario Tech corporate website.

BACKGROUND/CONTEXT & RATIONALE:

Eighteen months after the completion of a program review the Faculty is asked to report on the progress to date in implementing the agreed upon plans for improvement. The report is sent to the Academic Resource Committee for review and further follow-up, if required.

RESOURCES REQUIRED:

The Faculty’s plans to address any remaining resource needs are outlined in the 18-Month report. Information and support will be required from various areas of the University in order to implement the plan as originally agreed.

COMPLIANCE WITH POLICY/LEGISLATION:

The Ontario Universities Council on Quality Assurance (Quality Council), established by the Council of Ontario Universities in July 2010, is responsible for oversight of the Quality Assurance Framework processes for Ontario Universities. The Council operates at arm’s length from both Ontario’s publicly assisted universities and Ontario’s government. Under the Quality Assurance Framework, academic programs must undergo a cyclical review at least every eight years following their implementation. The purpose of the cyclical program review is to critically examine the components of a program with the assistance of outside reviewers with the goal of continuous improvement. A program review’s purpose is not solely

to demonstrate the positive aspects of the program, but also to outline opportunities that will lead to improvements for the future.

NEXT STEPS:

- Following the presentation to Academic Council, this summary will be posted to the University's website.

SUPPORTING REFERENCE MATERIALS:

18-Month Report Summary



**18-Month Follow-Up
SUMMARY REPORT
September 8, 2023
Bachelor of Engineering (Hons), Software Engineering
Dean: Dr. Hossam Kishawy**

Under Ontario Tech University's Institutional Quality Assurance Process (IQAP) and the Ontario Quality Assurance Framework (QAF), all programs are subject to a comprehensive review at least/at minimum every eight years to ensure that they continue to meet provincial quality assurance requirements and to support their ongoing rigour and coherence. Program reviews involve several stages, including:

1. A comprehensive and analytical self-study brief developed by members of the program under review.
2. A site visit by academic experts who are external to and arm's length from the program. The visit involves discussions with senior academic administrators, faculty, staff, and students.
3. Submission of an external reviewers' report including recommendations on ways the program may be improved based on a review of the program's self-study brief, discussions during the site visit and supporting material.
4. Internal responses to the external review and recommendations prepared separately by the Program and Dean.
5. Development of an Implementation Plan prepared by the Dean including resource requirements and a timeline for acting on and monitoring the implementation of the recommendations.

All programs that undergo a review must provide a report eighteen months after the completion of the review to gather information on the progress that has been made implementing the agreed upon plans for improvement.

In 2019 – 2021 a review was scheduled for the Bachelor of Engineering in Software Engineering program, with a site visit on June 21 – 24, 2021. The program has submitted to the Provost’s Office a report outlining the progress they have made relative to the implementation plan resulting from the review. A summary of this progress is provided on the following pages.

Implementation Plan Action Item(s) <i>(corresponding recommendation # from reviewers’ report)</i>		Timeline	Status*	Comments from Dean
1.	Increase the number of Software Engineering research-track faculty members.	2023-2024	Complete	Three Software TTT have been hired: Sana Alwidian, Mohamed El-Darieby, and Mennatullah Siam (starts July 1, 2023). One more TTT is planned in the next budget ask.
2.	Add at least one dedicated lab technician for Software Engineering to ensure consistent lab delivery and help faculty members in developing new labs.	2022-2023	In-progress	In-progress
4.	Dedicated SOFE 2710U delivery for Software students with more in-depth coverage of object-oriented programming and extensive labs/projects.	2023-2024	Complete.	The Faculty believes that the existing course that serves multiple programs is sufficient and that if additional content is required, it can be added to other existing courses.
6.	Enhance exposure to the implementation of data structures and algorithms in software with examples from industrial applications.	2023-2024	In-Progress	Work ongoing
7. 8.	Enhance the coverage of software design patterns and incorporate its use in the labs to provide hands-on experience.	2023-2024	In-Progress	Work ongoing

9. 15.	Improve student feedback process; meet with students at a townhall to gather feedback; improve mechanisms for students to raise issues with the program.	Ongoing	Complete	As part of the Continual Improvement process implemented by the Faculty of Engineering and Applied Science, ECSE has four Student Academic Experience Committee meetings per year which allows for input directly from students. This enables students to provide valuable feedback on their programs in addition to the course surveys that are already in place for student feedback.
12.	Library is offering good resources including selective titles of O'Reiley e-books that are practice oriented. The SOFE program and instructors should provide the relevant titles to the library to continuously update its arsenal of e-books.	2021-2022	Complete	This is ongoing. We have implemented a process in which the Department Chair sends a reminder email to faculty each term requesting information (titles) on new reference materials. This information is then provided to the library so they can update their holdings of e-books for students to access. As well, faculty members can send requests for new library acquisitions at any time to the library for consideration.
16.	It would be useful for the department to review carefully the details of the program and map it explicitly to the ACM/IEEE model curriculum.	2023-2024	In-Progress	Development of curricular guidelines in Software Engineering is particularly challenging given the rapid evolution and expansion of the field. Consequently, an AI course is being looked at for including in the program map.
17.	Python should be incorporated in the SOFE curriculum as its integral part	2023-2024	In-Progress	Additional programming languages, such as Python can be incorporated into existing courses in the program. The Software Engineering PCC will review which languages should be used in program specific courses.
18.	Tracking initiatives, that are/will be implemented to improve the quality of the program, assessment of these initiatives, and the associated learning outcomes and teaching environment.	2023-2024	Complete	We have implemented a Continual Improvement process to improve the quality of the program and to assess the learning outcomes and teaching environment. Course instructors are required to complete a course dossier for each course taught at the end of each term. The course dossier provides an assessment of student performance based on the graduate attributes addressed in the course. A performance level breakdown is provided with an analysis of the breakdown. Recommendations for course changes to address any poor performance or issues if they exist are proposed.

			<p>The courses have also been divided into different streams and teams of instructors have been formed to do course assessments of the course dossiers for their stream. The purpose of the course assessment team is to provide recommendations for continuous program improvement. Teams are required to specify issues identified, the graduate attribute affected and suggested actions for improvement.</p> <p>The next step in the process is the continual improvement committee meeting where the committee members make recommendations on curricular changes to courses as as recommendations to the Program Curriculum Committees for suggested curriculum changes to address any issues that were identified.</p> <p>The PCC then brings forward motions for change to the curriculum to address the issues and they are implemented upon final approval from the Undergraduate Studies Committee.</p>
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***Process Status Legend:**

Complete: Accomplished action item; no further steps required.

Continuous: Initial action item complete but requires ongoing monitoring and/or enhancement.

In Progress: Progress on the action item has been initiated but is not complete at this time. Outline all steps taken in the comment's column.

On Hold: Unable to complete due to other dependent factor(s).

Cancelled: Item no longer relevant or resources unavailable.

This summary report will be sent for approval to the appropriate standing committee of Academic Council (USC or GSC), and will subsequently be reported to Academic Council. It will then be posted on the Ontario Tech corporate website.

Next Scheduled Program Review: 2027 - 2029