

Two-Year Progress Report

Environment and Business (BES, MEB), Sustainability Management (MES), Economic Development and Innovation (MEDI)

October 2020

Background

The Environment and Business (BES, MEB), Sustainability Management (MES), and Economic Development and Innovation (MEDI) programs were assessed jointly at the last program review, which was completed in July 2017. The Final Assessment Report was approved in November 2018 by Senate Graduate Council (SGRC) and presented for information to Senate thereafter.

Several strengths of the four programs were identified as well as opportunities for improvement. The implementation plan progress is presented below for each of the recommendations identified by the program reviewers.

This report is structured as follows:

- Environment and Business (BES) Recommendations
- Environment and Business (MEB) Recommendations
- Sustainability Management (MES) Recommendations
- Economic Development and Innovation (MEDI) Recommendations
- Overall Recommendations
- Updated Implementation Plan (table format)

Progress on Implementation Plan

Bachelor of Environmental Studies (BES) Environment and Business (Honours)

1. Articulate a more coherent narrative about the key learning goals of the program including the perspective, knowledge, and skills that students will have gained by completing it.

Status: **ongoing**

Details: We recognize the importance of clearly articulating a coherent message with the respect to program outcomes. As part of the curriculum review process, which began in June of 2019, we assessed our existing program outcomes against best-practices outlined

by CTE. With CTE support and guidance, we workshopped our existing thirty-three program outcomes and were able to refine them down to ten. We then sought input from department faculty, current and former students, and other key stakeholders such as the Associate Dean's office. Upon integrating stakeholder feedback, we settled on nine program outcomes. We then undertook a curriculum mapping exercise to map our courses to the program outcomes across three levels of engagement (i.e., introductory, developing and proficient). With this information we can now better present a coherent narrative of the learning outcomes of the program.

A key component of communicating program outcomes, we are currently developing, with the support of and RA this semester, a graphic to visually express our refined program outcomes to all stakeholders, mainly through our promotion and recruitment materials as well as the program website. We are also developing a modified graphic for each required course in the program to communicate which of the program outcomes are addressed in the course and to what degree (i.e., introductory, developing and proficient). We envision that this course-specific program outcome graphic could appear on the course outline and the course LEARN page. The graphics will be finalized Fall 2020 and broadly disseminated as described above in January 2021.

2. Review the content in the integrative courses with attention to overlap in content.

Status: **ongoing**

Details: The Associate Director (AD), Undergraduate (formerly Program Director) meets informally and regularly with faculty to discuss curriculum-related issues. Topics for discussion and approval are brought forward to SEED Department meetings. In the past, the AD also held a one-day curriculum retreat in June each year with faculty and instructors to coordinate the integrative course offerings to avoid redundancy and to review the program's learning objectives. However, in 2020 this retreat was not held due to COVID-19.

In addition to ongoing engagement between the AD and faculty on the matter of content, CTE administered our curriculum map review, which was completed in August 2020. With this information we are able to assess whether there is sufficient scaffolding of program outcomes from introductory->developing->proficient from first-year through fourth-year. We will be presenting these findings for discussion at our next SEED meeting in Fall 2020. We will also be looking to carry out a content map review of program concepts and topics, again to be facilitate by CTE. We are in the preliminary stages of determining when this could commence, but most likely January 2021.

3. Add a more deliberate reflection on students' applied learning in the integrated courses in the program (those over which you have control).

Status: **ongoing**

Details: Reflection and integration of applied learning (chiefly, co-op work experience) is largely addressed through work term reports, which have been the subject of much discussion within the Faculty and the University at large. The University has just completed a long-awaited RFP for a new software suite – known as Pebblepad – to better integrate applied learning across the student experience. Within SEED, the software was piloted Winter 2019 in ENBUS 112, and was implemented in ENBUS 102 Fall 2019. The goal is to get our new cohort used to this new tool upon their arrival. The broad roll out will be dependent on the adoption by our instructors.

The portfolio functionality of PebblePad enable students to not only connect course content to program outcomes but also work term experiences. As such, we are in the process of re-imagining the work term reports to better reflect and connect to our program outcomes. Working with Associate Dean, Undergraduate Studies, the AD has taken on drafting a new work term report framework, with new structure and questions, which have been supported by CTE. This new report structure will be ready for pilot testing in early 2021.

4. Work with the co-op office to improve the availability of relevant co-op placements for ENBUS students.

Status: **ongoing**

Details: Our experiential learning lead continues to connect with Co-operative and Experiential Education (CEE) to help identify relevant co-ops for Environment and Business students. CEE has been very receptive to these initiatives, which are supported by potential employers. The market is continuing to expand with an increasing number of opportunities in the sustainability field broadly, which bodes well for our students. We will continue to work closely with CEE to ensure that our students have the most relevant co-op opportunities, commensurate with their degree of knowledge and experience.

5. Better track student outcomes beyond graduation including more data on employment after six months and two years after graduation; post graduate study; and alumni reports on program quality.

Status: **ongoing**

Details: Continuing to track student outcomes beyond graduation remains an important set of data for SEED in understanding the effectiveness of our program. The data collected by the University reveals that our programs continue to improve annually. As such we see no reason to change the way the University gathers and shares this information.

6. Contribute to the development of a common pool of core business courses such as courses in both macro and micro economics, financial and managerial accounting, operations management, data and decisions, marketing, business communication, and project management

Status: **completed**

Details: Following the UW Business Working Group' report entitled "Business at Waterloo Programs: Current State and Future Opportunities", (delivered May 5, 2017 – after the completion of the Reviewers report), the School identified strategy and marketing as areas in which it can contribute to the core business offerings of the University. Effective Fall 2019, Principles of Marketing for Sustainability Professionals (ENBUS 211) and Strategies for Environment and Business (ENBUS 302), are no longer restricted to ENBUS students and will now be open to all UW students as a services course. Assessment by the Associate Director, Undergraduate is ongoing to identify additional courses.

7. Consider introducing a more 'integrative' course in second and third year

Status: **not selected for implementation**

Details: This recommendation was evaluated at the 2018 curriculum review and will not be adopted. Because the current integrative course (ENBUS 112) was created to address student concerns that the first-year curriculum did not have enough integrative content (there is one other integrative course – ENBUS 102 – in the first year), it will remain where it is in the sequence. In addition, there are existing integrative courses in second and third years (ENBUS 202 and 302).

8. Consider developing streams within the program

Status: **not selected for implementation**

Details: This recommendation was evaluated at the 2018 curriculum review and will not be adopted. The reasons include the fact that the Environment and Business program is designed to be broad, with a degree of specialization in the eight-month fourth year capstone projects (ENBUS 402 A,B).

Master of Environment and Business (MEB)

9. Revisit the curriculum map with attention to setting out a clearly sequenced set of learning objectives around knowledge development, knowledge mastery and knowledge application

Status: **completed**

Details: A limited mapping of program objectives to course learning outcomes to ensure clearly sequenced objectives was carried out at the curriculum review retreat in 2018. A

full mapping exercise is planned for 2021, similar to what has been achieved for the undergraduate program.

10. Tie key assessments to key learning objectives so that future self-assessment reports can comment on student performance in meeting key learning objectives

Status: **completed**

Details: This exercise was completed as part of recommendation 9 above.

11. Tighten up admission requirements with respect to prior work experience

Status: **completed**

Details: The three-year work experience requirement is in force. At the time of the evaluation we were experimenting with allowing applicants with a highly relevant co-op degree (and the related co-op work experience) to be considered. We have since tightened this up as recommended by also expecting applicants to be working full-time in a sustainability related position, and we will only accept them into the part-time program.

12. Develop recommendations for how students can supplement the Learning Management System interface to enrich their interactions as a cohort

Status: **ongoing**

Details: The former MEB Director surveyed then current MEB students (2017-18) on potential improvements for engagement. Discussions were also held with CEL and MEB instructors. Updating of the technology and course content is ongoing. The recent move from UW to Microsoft 365 and Teams have provided the necessary consistent and uniformly available platform for our online students to engage directly with course instructors and for course teamwork. Instructors have already built this tool into course delivery and during the 2021 full mapping exercise instructor experience will be used to formalize expectations around how these engagement tools can and should be used in course delivery.

13. Incorporate a visit from the librarian into the introductory in-person module that is linked to a deliverable (so that students have an opportunity to apply the knowledge provided).

Status: **completed**

Details: This strategy is already incorporated into the program – no further action required. The assessment of the in-person lessons occur a few weeks later in ENBUS 602.

14. Consider how the LMS could be enriched to provide a richer, more interactive experience

Status: **ongoing**

Details: See recommendation 12 above.

15. Consider how this online content could be leveraged to enhance learning in your other programs

Status: **completed**

Details: All MEB electives are open to non-MEB students, and the School runs parallel versions of the core courses for non-MEB students. There is uptake from across the School's other graduate programs.

16. Consider how some of the course content in other programs (for instance, MEDI) could be leveraged into this program

Status: **ongoing**

Details: The challenge is that the MEB is an online program, while the majority of courses offered by other programs at SEED are in-class delivery. However, as online learning options are increasing, so too will the options for MEB students to take courses in other programs increase. This is an ongoing process, though there have been initial successes demonstrated by the interchange of students between the (Geography) Master of Climate Change Program (also online) for program electives

Master of Environmental Studies (MES) in Sustainability Management (SUSM)

17. Provide more up-front support in planning for electives (consider creating guidance on electives streams in Life Cycle Assessment (LCA), responsible finance and community economic development)

Status: **completed**

Details: The program website at SEED provides a list of SEED electives that are updated annually, one year ahead. There is also a list of electives that are available in other units within the Faculty. These lists are useful for both students and advisors in course sequence planning. In addition, SEED provides a link to the Graduate Calendar course search service at the University. Linking to the Graduate Calendar course search service allows students to identify current courses within and outside our School and Faculty, and to plan their electives accordingly. Academic advisors are always available for course consultation and planning.

18. Examine whether more 'management' content is needed in the curriculum

Status: **not selected for implementation**

Details: In reviewing the available management content within the MEB course offerings, it has been decided to continue using these courses. At present, there are insufficient resources to develop an additional management course for the program.

19. Consider adding a mandatory research statistics course.

Status: **not selected for implementation**

Details: The School does not agree with the recommendation for a mandatory research statistics course. Because the program draws on students with diverse educational backgrounds and research interests, SUSM provides core methods training specific to the field of sustainability management. Therefore, SUSM 603 Research Methods for Sustainable Management is designed to meet the current learning outcomes for the program, and teaches quantitative and qualitative research methods, including statistical methods, case study analysis, life cycle assessment, survey methods, impact measurement, etc. Where a student may wish to attain a high level of statistical proficiency, they do so through relevant electives that focus only on statistics.

Master of Economic Development and Innovation (MEDI)

Recommendations

20. Clarify who will provide administrative support for the capstone and internships

Status: **completed**

Details: The administrative support for capstones and internships is now provided by the Graduate Administrator for the program, with limited additional support from the Economic Development Program (EDP) Outreach Manager.

21. Work with graduate studies to seek out additional funding to replace the TA funding

Status: **ongoing**

Details: At the time of the review, MEDI students were provided with a 0.5 TA. This is no longer available to MEDI students, which aligns with SEED's other professional courses. Currently, MEDI students have access to merit-based entrance awards from the Faculty; they are eligible for KEEN Scholarships; and they are eligible for Economic Development Program (EDP) entrance awards that are available from time to time (based on resources available from the EDP). These sources of funding are administered in coordination with graduate studies in the Dean's Office.

22. Consider making the land planning course mandatory

Status: **not selected for implementation**

Details: Due to the program design, it is not possible to add an additional mandatory course. We have determined that the land planning course is less central to the learning objectives of the program than the current mandatory courses. Therefore, MEDI continues to highly recommend the land planning course as an elective and work with the School of Planning to ensure that the course remains accessible and available to MEDI students.

23. Consider creating opportunities for more interaction between planners and the economic development program (for instance, working through case studies from both perspectives)

Status: **not selected for implementation**

Details: Consultations with the School of Planning have been concluded (2018). While no new initiatives have been proposed, it was confirmed that there is already a strong connection between planning and economic development in both theory and practice. MEDI students currently take courses in Planning and many undertake their internships within a planning environment (for example, local municipalities).

Overall Recommendations

The following recommendations apply to all the programs under review.

24. It is recommended that SEED establish a common format for outlining learning objectives for programs, for curriculum mapping against these core learning objectives as well as a common format for course outlines. For instance, course outlines should consistently include includes course goals, course descriptions, and learning objectives linked to their associated learning assessments and ideally, rubrics of assessment.

Status: **ongoing**

Details: This recommendation is read to apply to all programs within SEED. As noted for other programs, the School is carrying out full mapping exercises for each program. MEDI is planned to be the last program for which this will be done (planned for 2022). The reason is that because MEDI is the redesigned Local Economic Development (LED) program, this process involved a full evaluation of the program goals and learning objectives, and we are therefore confident that the courses align with the overall program objectives. As noted earlier under recommendation 1, we recognize the importance of moving toward a common course outline so that students are able to access information across courses. One of the challenges we have in implementing this recommendation is that the University and Faculty are looking to do the same. Therefore, as opposed to moving ahead with a standardized, school-wide course outline and then having to change

it, we have elected to wait until we receive the new format from the Associate Dean, Undergraduate Studies. It is unclear as to when we can expect this new format.

25. While there is an emphasis on the application of knowledge in all of the programs, there appears to be a need to make more space to deliberately incorporate reflection on the application of that knowledge into all of these programs.

Status: **ongoing**

Details: The School is implementing new university level co-op report changes, which incorporate additional reflectivity (2018-19).

Circumstances that have altered the original implementation plan: As of July 1st, 2018, the School amalgamated two Undergraduate Program Director roles into the Associate Director, Undergraduate. Simultaneously, the Graduate Program Directors amalgamated to create two Associate Director, Graduate Studies positions (one to oversee the research programs and the other to oversee the professional programs). While these changes have not resulted in significant variance on the implementation plan, it has been helpful to identify opportunities for greater synergies across our undergraduate and graduate programs. Over the current year (2019), the goal will be to complete the curriculum mapping exercises for Environment and Business in order to update our curriculum reviews as well as continually seeking opportunities to identify redundancies and gaps within the programs.

Significant developments or initiatives that have arisen since the program review process: The School and the Faculty have entered into an MOU with the Academy for Sustainable Innovation (ASI), which will give our students an additional accreditation when graduating from the Environment and Business program. Our program was approached by ASI due to our reputation as a leading program at the interface between environment and business.

Updated Implementation Plan

EB Recommendations		Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
1.	Articulate a more coherent narrative about the key learning goals of the program including the perspective, knowledge, and skills that students will have gained by completing it	A common course outline that includes clear learning objectives will be implemented, with appropriate consultation with our Faculty and the University	SEED Associate Director, Undergraduate Studies once direction is given from the Associate Dean, Undergraduate	Ongoing
2.	Review the content in the integrative courses with attention to overlap in content	Review annually (June) at ENBUS faculty and staff retreat. Curriculum mapping exercise of core all-ENBUS labelled core courses to identify gaps and redundancies	SEED Associate Director, Undergraduate (with CTE)	Spring 2020
3.	Add a more deliberate reflection on students' applied learning in the integrated courses in the program (those over which you have control)	There are plans to integrate reflective exercises about co-op placements into the new platform Pebblepad. These revisions are being implemented at the Faculty level and were piloted in Winter 2019. Further to this, SEED is working with the Associate Dean, Undergraduate Studies, and is currently drafting a new work term report framework, with new structure and questions, which have been supported by CTE. This new report structure will be ready for pilot testing in early 2021.	SEED Associate Director, Undergraduate Studies with support from the Experiential Learning Coordinator	Ongoing Pilot testing in 2021
4	Work with the co-op office to improve the availability of relevant co-op placements for ENBUS students	Our experiential learning coordinator continues to have discussions with CEE about increasing the number and type of co-op positions that are related to the ENBUS program. We are also looking at opportunities for ENBUS related co-op positions through our alumni network (which is still young but growing).	Experiential Learning Coordinator	Ongoing

5.	Better track student outcomes beyond graduation including more data on employment after six months and two years after graduation; post graduate study; and alumni reports on program quality	Data from IAP continues to be obtained annually.	Undergraduate Administrator	Ongoing
6.	Contribute to the development of a common pool of core business courses such as courses in both macro and economics, financial and managerial accounting, operations management, data and decisions, marketing, business communication, and project management	Two courses (ENBUS 211 & ENBUS 302) are now open to all UW students as service courses. Ongoing assessment to identify additional courses to be offered across the University.	Associate Director, Undergraduate Studies	Completed - Fall 2018
7	Consider introducing a more 'integrative' course in second and third year	This recommendation has been evaluated at the 2018 curriculum review and will not be adopted, given that there are integrative courses at first, second and third years. In addition, there are existing integrative courses in second and third years (ENBUS 102, 112, 202 and 302).	Associate Director, Undergraduate Studies	Not selected for implementation
8	Consider developing streams within the program	This recommendation has been evaluated at the 2018 curriculum review and will not be adopted. The reasons include the fact that the EB program is designed to be broad, with a degree of specialization in the eight-month fourth year capstone projects (ENBUS 402 A,B).	Associate Director, Undergraduate Studies	Not selected for implementation

MEB Recommendations		Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
9	Revisit the curriculum map with attention to setting out a clearly sequenced set of learning objectives around knowledge development, knowledge mastery and knowledge application	A limited mapping of program objectives to course learning outcomes to ensure clearly sequenced objectives was carried out at the curriculum review retreat in 2018. A full program mapping exercise is planned for 2021	MEB Program Director (former) MEB Program Director	Complete – 2018 Ongoing - 2021
10	Tie key assessments to key learning objectives so that future self-assessment reports can comment on student performance in meeting key learning objectives	This exercise was completed as part of recommendation 9 above.	MEB Program Director (former)	Complete - 2018
11	Tighten up admission requirements with respect to prior work experience	Three-year work experience is in force. Exceptions are on a case by case basis and only allowable for the part-time option.	Associate Director, Graduate Studies	Complete
12	Develop recommendations for how students can supplement the LMS interface to enrich their interactions as a cohort	The MEB Program Director surveyed the 2017-18 MEB students on potential improvements for engagement. Discussions have been held with CEL and MEB instructors. New technologies are adopted as they become available to the LMS (e.g. Microsoft Teams).	MEB Program Director (former) Associate Director, Graduate Studies	Discussion completed Winter 2018 Implementation ongoing
13	Incorporate a visit from the librarian into the introductory in-person module that is linked to a deliverable (so that students have an opportunity to apply the	Current practice meets recommendation. No follow-up required.	Instructor	Completed

14	Consider how the LMS could be enriched to provide a richer, more interactive experience	See recommendation #12 above		
15	Consider how this online content could be leveraged to enhance learning in your other programs	See recommendation #12 above and #16 below		
16	Consider how some of the course content in other programs (for instance, MEDI) could be leveraged into this program	The challenge is that the MEB is an online program, while the majority of courses offered by other programs at SEED are in-class delivery. However, as online learning options are increasing (e.g. GEOMCC), so too will the options for MEB students to take courses in other programs increase. This is an ongoing process.	SEED Director	ongoing

SUSM Recommendations		Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
17	Provide more up-front support in planning for electives (consider creating guidance on electives streams in LCA, responsible finance and community economic development)	The practice of posting a list of available electives by term/year has been replaced with the link to the Graduate course search service at the University. This ensures up to date lists and increases student options.	Associate Director, Graduate Studies	Completed - 2019
18	Examine whether more 'management' content is needed in the curriculum	In reviewing the available management content within the MEB course offerings, it has been decided to continue using these courses. At present, there are insufficient resources to develop an additional management course for the program.	Associate Director, Graduate Studies	Not selected for implementation

19	Consider adding a mandatory research statistics course.	The School does not agree with the recommendation for a mandatory research statistics course. SUSM 603 Research Methods for Sustainable Management meets the current learning outcomes intended for the program.	Associate Director, Graduate Studies	Not selected for implementation
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MEDI Recommendations		Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
20	Clarify who will provide administrative support for the capstone and internships	The administrative support is provided by the Graduate Administrator for the program, with limited additional support from the Economic Development Program (EDP) Outreach Manager.	Associate Director, Graduate Studies	Completed – Fall 2017
21	Work with graduate studies to seek out additional funding to replace the TA funding	Student funding allocations are determined at the Faculty level via the Associate Dean, Graduate Studies and MEDI follows the process in current practice. MEDI also has a scholarship fund provided by the Economic Development Program (EDP) to assist with recruitment.	SEED Director and Associate Director, Graduate Studies	ongoing
22	Consider making the land planning course mandatory	Due to the program design, it is not possible to add an additional mandatory course. Therefore, MEDI continues to highly recommend the land planning course as an elective and work with the School of Planning to ensure that the course remains accessible and available to MEDI students.	MEDI Director (former)	Not selected for implementation

23	Consider creating opportunities for more interaction between planners and the economic development program (for instance, working through case studies from both perspectives)	Consultations with the School of Planning have been concluded (2018). While no new initiatives have been proposed, it was confirmed that there is already a strong connection between planning and economic development in both theory and practice. MEDI students currently take courses in Planning and many undertake their internships within a planning environment (for example, local municipalities).	MEDI Director (former) SEED Director and Associate Director, Graduate Studies	Not selected for implementation
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SEED Recommendations	Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
24 It is recommended that SEED establish a common format for outlining learning objectives for programs, for curriculum mapping against these core learning objectives as well as a common format for course outlines. For instance, course outlines should consistently include includes course goals, course descriptions, and learning objectives linked to their associated learning assessments and ideally, rubrics of assessment	See recommendation #1 above.	SEED Director, and Associate Directors Undergraduate and Graduate Studies	ongoing
25 While there is an emphasis on the application of knowledge in all of the programs, there appears to be a need to make more space to deliberately incorporate reflection on the application of that knowledge into all of these programs	See recommendation #3 above	SEED Director, and Associate Directors Undergraduate and Graduate Studies with support from the Experiential Learning Coordinator	Pilot completed – Winter 2019 Implementation – Fall 2019

The Department Chair/Director, in consultation with the Dean of the Faculty shall be responsible for monitoring the Implementation Plan.

Date of next program review: _____ **2023-2024** _____
Date

Signatures of Approval:



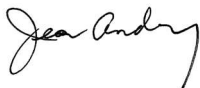
12 May 2021

Chair/Director

Date

AFIW Administrative Dean/Head (For AFIW programs only)

Date

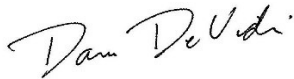


12 May 2021

Faculty Dean

Date

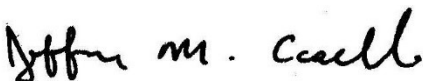
Note: AFIW programs fall under the Faculty of ARTS; however, the Dean does not have fiscal control nor authority over staffing and administration of the program.



January 2, 2020

Associate Vice-President, Academic
(For undergraduate and augmented programs)

Date



January 21, 2020

Associate Vice-President, Graduate Studies and Postdoctoral Affairs
(For graduate and augmented programs)

Date