University of the Fraser Valley

Statistics

Faculty of Science

Dean's Summary

Submitted by:
Dr. Ian Affleck, Acting Dean, Faculty of Science

Accepted by:
Senate in October 2026
Academic Planning and Priorities Committee in September 2026

MEMORANDUM

Academic Planning and Priorities Committee

TO:	James Mandigo, Chair, Senate
FROM:	Tracy Ryder Glass, Chair, Academic Planning and Priorities Committee
CC:	Ian Affleck, Acting Dean, Faculty of Science Ben Vanderlei, Department Head, Mathematics and Statistics
DATE:	September 25, 2026
RE:	Program Review - Statistics

The Statistics program within the Faculty of Science recently underwent a program review. The Academic Planning and Priorities Committee reviewed all of the documentation related to the program review and accepted them at its September 23, 2026 meeting and recommend to Senate for acceptance.

The overview included priorities addressed in the action plan and include; priorities to address student success, benchmark curriculum against other institutions, integrate software and artificial intelligence into data analysis, strengthen collaboration with the agriculture and One Health sectors, improve course descriptions, advance Indigenization and school outreach, assess the future of minors and a possible smaller certificate, and explore a statistics consulting centre, while recognizing challenges related to program capacity, funding, and an ambitious implementation timeline. Discussions included the potential of creating a two-year post-baccalaureate credential that could extend or replace the current Data Analysis Certificate. While conversations around the admission requirements have not taken place, it was noted that they could be similar to the existing certificate. A two-year program could also provide opportunities for international students. Other discussions include the potential for the proposed credential to ladder into graduate studies or complement other degrees, such as economics and science.

The APPC congratulated and thanked the program review committee for a great review.

Suggested motion:
THAT Senate accept the Statistics Program Review as presented.

Program Review: Action Plan

Data Analysis Certificate, Applied Statistics Minor, Math Minor: Statistics Option

Curriculum and Assurance of Learning			
Goal: Improve student success in STAT 104, 106, and 270.			
Data from Institutional Research shows a high DFW rate for all three of these introductory courses. Student Success & Experience is Theme 4 in UFV's Integrated Strategic Plan (ISP) and we recognize several factors impacting student success in these courses. Specific recommendations for improvement in this area are included in the External Reviewer Report.			
Tasks to complete the goal:			
Task	**Key Milestone or Measurable Outcome**	**Timeline**	**Assigned to**
Gather data from IR that includes grade distributions broken down by prerequisites as well as other factors such as university experience.	Reception of data from IR	Fall 2026	Statistics Program Review Team
Review the content, pace, and prerequisites of STAT 104 and 106, as well as the assessment methods used in these courses.	A document that details the delivery of the course across all sections	Fall 2026	Statistics Program Review Team
Coordinate STAT 104 and 106 by identifying expectations for core content and building a question bank to ensure consistency across sections.	A question bank for STAT 104 and 106	Fall 2026	Statistics Program Review Team
Review the content and pace of STAT 270, as well as the assessment methods used in the course.	A document that details the delivery of STAT 270	Fall 2027 (Both 270 instructors on sabbatical leave 2026-27)	Statistics Program Review Team
Implement consistent policy and frequent in-class assessments to improve class attendance.	A document detailing policies and assessments aimed at improving attendance	Fall 2027	Statistics Program Review Team
Implement early diagnostic assessments (first 2–3 weeks) to identify at-risk students so that they can be directed to appropriate support.	An early diagnostic assessment and a document detailing the implementation	Fall 2027	Statistics Program Review Team
Goal: Compare content in STAT 104, 106, 270 to courses at other BC institutions.			
Our introductory statistics courses serve many UFV students across different areas of UFV and we want to ensure that the content and expectations are consistent with comparable courses at other BC institutions. This goal was a recommendation in the External Reviewer Report and aligns directly with Integrated Strategic Plan (ISP) Theme 4.			

Tasks to complete the goal:			
Task	**Key Milestone or Measurable Outcome**	**Timeline**	**Assigned to**
Survey courses which are (and are not) articulated to (and from) these intro courses.	A document comparing content among such courses	Fall 2026	Statistics Program Review Team
Follow up with articulation committee representatives where our courses do not transfer directly.	Correspondence as needed		Statistics Program Review Team
Meet with other departments at UFV to find out whether all topics are useful to at least one department that requires the course.	Meeting minutes	Fall 2026	Statistics Program Review Team (Meeting initiated by Department Head)

Goal: Evaluate software selection in STAT courses.

The use of software is a significant component in our statistics courses and the selection of software may impact student success. In service courses, we want to ensure that our choices align with software that is used in other programs as much as it is feasible. The External Reviewer Report made specific a specific recommendation to increase the integration of Python.

Tasks to complete the goal:			
Task	**Key Milestone or Measurable Outcome**	**Timeline**	**Assigned to**
Review software usage in all stats courses, comparing software used at other institutions and considering the objective of software use in the course.	Table of potential software with the pros and cons of various choices	Winter 2027	Statistics Program Review Team
Meet with other departments to find out their expectations of software use for their students.	Meeting minutes	Winter 2027	Statistics Program Review Team
Decide on software selection based on the review work and feedback from other areas.	Minutes of Stats Committee meeting	Winter 2027	Statistics Program Review Team

Goal: Plan for the integration of AI into statistics courses.

Rationale: As described in the Self-Study Report, we anticipate the need for curricular adjustments driven by the widespread use student use of generative AI and the broader trend of integrating AI into many tasks associated with data analysis. These changes support ISP Themes 3, 4, and 6 (Lifelong Learning, Student Success & Engagement, and Personal & Professional Development).

Tasks to complete the goal:			
Task	**Key Milestone or Measurable Outcome**	**Timeline**	**Assigned to**
Develop faculty fluency in AI integration in teaching and learning	Resources developed and shared among the group to support AI use in teaching and learning	Ongoing, to begin Fall 2026	Statistics Program Review Team

Develop consistent expectations for AI use in in statistics courses	Syllabi that demonstrate the communication of such expectations	Fall 2026-Winter 2027	Statistics Program Review Team
Revise assessments to emphasize process and reasoning	Revised assessments, with comparisons made to previous versions.	Ongoing, to begin Fall 2026	Statistics Program Review Team

Goal: Build connections to the Fraser Valley agriculture industry.

Rationale: As described in the Self-Study and External Review reports, connection with local industry is important for our programs and promotes collaboration which can aid in securing external resources. Doing this work with local agriculture industry supports ISP Themes 2 and 7 (Applied Research and Engagement with Community).

Tasks to complete the goal:

Task	Key Milestone or Measurable Outcome	Timeline	Assigned to
Communicate with UFV Agriculture to discuss the integration of data from research in their area.	Meeting minutes	Fall 2026	Statistics Program Review Team (Meeting initiated by Department Head)
Reach out to the Agassiz Research and Development Centre.	Correspondence	Fall 2026	Statistics Program Review Team

Student Achievement

Goal: Improve course descriptions of introductory statistics courses and collaboration with the Academic Advising Centre.

Directing students to courses that align with their goals and preparation is essential to ISP Theme 4 (Student Success & Engagement) and is among the recommendations in the External Reviewer Report.

Tasks to complete the goal:

Task	Key Milestone or Measurable Outcome	Timeline	Assigned to
Develop guidelines to be shared with Advising. Guidelines will include clarity of prerequisites and timing of course in consultation with other departments.	Guidelines for advising stats students	Winter 2027	Statistics Program Review Team
Meet with Advisors to share guidelines and discuss common student pathways.	Summary of meeting	Winter 2027	Statistics Program Review Team (Meeting initiated by Department head)
Produce a one-page "Stats pathways" sheet for common student goals (science, health, business, arts, etc.) to be published on departmental webpage.	Stats pathways document published to departmental webpage	Winter 2027	Statistics Program Review Team

Goal: Increase outreach to secondary schools.

Community outreach plays a vital role in promoting UFV programs and strengthening the connections between the university and the broader community. Engagement with Community is ISP Theme 7 and is among the recommendations in the External Reviewer Report.

Tasks to complete the goal:

Task	Key Milestone or Measurable Outcome	Timeline	Assigned to
Offer to mentor students whose Science Fair projects involve gathering data. This task will include direct communication to school heads and science teachers.	Correspondence with schools	Winter 2027	Statistics Program Review Team
Communicate with schools such as Rick Hansen School of Science & Business, to find out about opportunities for our upper-level students to present their projects to audiences at local high schools.	Correspondence with schools	Winter 2027	Statistics Program Review Team
Develop a presentation about the use of statistics in the workplace and in everyday life, with the aim of including the presentation as a part of larger outreach events that bring community members to campus.	Presentation slides and materials	Winter 2028	Statistics Program Review Team
Develop statistics enrichment activities to offer students who attend the BC Secondary Schools Math Contest on campus. The activities could be used at other events that bring secondary school students to campus.	Enrichment materials and summary of use	Winter 2028	Statistics Program Review Team

Goal: Increase Indigenization efforts of the department.

Indigenization and Reconciliation is Theme 1 of the ISP and we as a department are committed to carrying out the work in our spaces and with our students. Increasing our efforts was among the recommendations of the External Reviewer Report.

Tasks to complete the goal:

Task	Key Milestone or Measurable Outcome	Timeline	Assigned to
Connect with Indigenous Student Centre to discuss support for Indigenous students.	Correspondence and/or meeting minutes	Winter 2027	Statistics Program Review Team
Integrate into every class and explanation to students how teaching and learning methods used align with the	Document describing the alignment of teaching in stats with First Peoples Principles	Winter 2027	Statistics Program Review Team

First Peoples Principles of Learning document which is now posted in every learning space on campus.			
Seek support from Teaching & Learning specialists when giving consideration to Indigenization of curriculum.	Correspondence	Ongoing	Statistics Program Review Team

Governance and Resources			
Goal: Streamline the deployment of software.			
The use of software is a significant component in all UFV statistics courses. Ensuring accurate and efficient deployment of this software not only contributes to the responsible management of the resources, but also promotes student success (ISP Theme 4) and is among the recommendations in the External Reviewer Report.			
Tasks to complete the goal:			
Task	**Key Milestone or Measurable Outcome**	**Timeline**	**Assigned to**
Identify challenges with accessing required software, and the potential use of virtual labs	Summary of meeting	Fall 2026	Statistics Program Review Team
Meet with IT to discuss challenges and opportunities	Summary of meeting	Winter 2027	Statistics Program Review Team (Meeting initiated by Department head)

Planning and Sustainability			
Goal: Plan for future statistics programs and courses.			
A strategic plan is necessary to clarify the priorities of the department regarding the future of statistics programs in the context of the rapidly evolving environment of data science and AI. Work towards this goal supports ISP Theme 3 (Lifelong Learning). Tasks supporting this goal include recommendations from the External Reviewer report and are discussed in the Self-Study Report.			
Tasks to complete the goal:			
Task	**Key Milestone or Measurable Outcome**	**Timeline**	**Assigned to**
Develop an Associate Certificate in Applied Statistics as a shorter alternative to the ASM.	Program proposal	Fall 2026 development, aiming to offer the credential in Fall 2027	Statistics Program Review Team
Begin development of a two-year program in Data Science or Data Analytics.	Formation of a working group that includes faculty from the School of Computing.	Fall 2026	Statistics Program Review Team
Explore the feasibility of short courses or workshops to promote as professional development opportunities for individuals working in the secondary school system or the industrial sector.	Summary of meetings with management and PDQA office	Fall 2027	Statistics Program Review Team

Meet with UFV department heads and directors to explore the cross-disciplinary capstone courses.	Summary of meetings	Fall 2027	Statistics Program Review Team (Meeting initiated by Stats Committee Chair)
Develop a concise program portfolio map of majors, minors, DACs, and micro-credentials, identifying target audiences and areas of overlap. Create a sustainability model that demonstrates how shared courses support multiple credentials and enhance long-term viability.	Map of credentials and sustainability model demonstrating how courses support multiple credentials	Fall 2028	Statistics Program Review Team
Explore the possibility of inviting alumni currently working in the industry or government to form the external advisory committee of DAC or future programs.	Correspondence	Fall 2028-Winter 2029	Statistics Program Review Team (Meeting initiated by Stats Committee Chair)

Goal: Investigate possible revision to the DAC.

As described in the Self-Study Report, the DAC has declined in enrolment in recent years and has most recently been impacted by changes to immigration policy. As a result, we need to consider whether we can revise the program to be more attractive in the current international market, or whether it may be better to revert the program to the original undergrad credential to be promoted to domestic students.

Tasks to complete the goal:

Task	Key Milestone or Measurable Outcome	Timeline	Assigned to
Meet with the PDQA office to clarify possibilities for revising the DAC under current program development policies.	Summary of meeting	Summer 2026	Statistics Program Review Team (Meeting initiated by Stats Committee Chair)
Decide on changes to the DAC committee.	Summary of meeting	Summer 2026	DAC committee (Meeting initiated by DAC Committee Chair)
Present proposed DAC changes for departmental approval	Proposed program changes	Fall 2026	Math & Stats Department and School of Computing

Goal: Decide on the future of the minors.

As detailed in the Self-Study Report, the statistics minors are undersubscribed and have been delivered only by making efficient use of courses that are also part of the Data Analysis Certificate. We must decide on actions to promote these program options or accept that their future is coupled to that of the DAC.

Tasks to complete the goal:

Task	Key Milestone or Measurable Outcome	Timeline	Assigned to

Meet with the Dean's office to decide the viability of the statistics minors independent of the DAC.	Summary of meeting and any decisions that are communicated	Fall 2026	Statistics Program Review Team (Meeting initiated by Department head?)
If the minors will continue to be offered, develop a comprehensive promotion plan.	Documentation of promotion plan, including advising support, outreach for key majors, and example program pathways that include the statistics minors.	Winter 2027	Statistics Program Review Team
Meet with advisors to discuss the promotion of the statistics minors and discuss any perceived barriers.	Summary of meeting	Winter 2027	Statistics Program Review Team (Meeting initiated by Stats Committee Chair?)
Meet with CECE to identify possible opportunities for statistics students among local organizations. This may be followed up by communications with employers to compare the skills they seek with those developed in statistics students.	Summary of meeting with CECE and any other meetings that are initiated as a result.	Winter 2027	Statistics Program Review Team (Meeting initiated by Stats Committee Chair?)
Establish an alumni and employer feedback loop through a short survey or advisory discussions.	Alumni survey and description of implementation	Fall 2027	Statistics Program Review Team

Goal: Re-establish Stats Consulting Centre

Re-establishing a Stats Consulting Centre would increase the visibility of the department and promote statistics programs by demonstrating the practical value and broad applicability of statistical expertise across disciplines. This goal supports ISP Themes 2, 3, and 6 (Applied Research, Lifelong Learning, and Personal & Professional Development) and aligns with the External Reviewer Report in its recommendations to specifically establish this service and to increase visibility of the department and its collaboration with other departments at UFV.

Tasks to complete the goal:

Task	Key Milestone or Measurable Outcome	Timeline	Assigned to
Meet with other UFV departments (e.g., Biology, Business, Psychology, Sociology, Nursing) to offer support for their courses which include the collection and analysis of data.	Summary of meetings	Fall 2026 (Meetings with UFV departments set in other goals may be combined)	Statistics Program Review Team (Meeting initiated by Stats Committee Chair)
Discuss with management how faculty working as stats consultants can receive fair compensation for their time and expertise if they are consulting with external organizations who are paying for their service.	Summary of meetings	Fall 2027	Statistics Program Review Team (Meeting initiated by Stats Committee Chair)

Meet with the UFV Research Office to explore mechanisms for connecting statistics faculty with researchers from other disciplines.	Summary of meeting	Fall 2027	Statistics Program Review Team (Meeting initiated by Stats Committee Chair)

Dean's Summary Statement

The Action Plan presented above by the Statistics Program Review Committee represents a thorough and thoughtful examination of the statistics courses and programs delivered by the Mathematics and Statistics Department. The External Report and the Action Plan are of critical importance at this time, as the Statistics program is facing two challenges that must be addressed: low student success rates in entry-level statistics courses, and low enrolment counts in minor and certificate programs.

The first of these is addressed in the Action Plan with proposals to examine data from Institutional Research, to help identify what aspects of student preparedness are putting them at risk, and to compare the courses with their transfer counterparts at other institutions, to determine if there are ways to reduce the volume and pace or learning in these courses. As these processes will take time to implement changes, it's good to see plans for immediate actions to be taken as well to increase student success as early as Fall 2026.

The second of these challenges is addressed here with multiple concrete actions, including an accelerated review and update of the Data Analysis Certificate, along with plans to create new program proposals, consult/collaborate with other academic disciplines, and form an external advisory committee.

Beyond the actions promised to address these to challenges, the Action Plan includes multiple proposals to modernize, grow, and increase the relevance of Statistics at UFV. These include integrating AI into courses, advancing the Indigenization of curriculum, connecting with the local Agriculture industry, local high schools and UFV Advising, streamlining software deployment, and investigating the feasibility of creating a Statistical Consulting Centre.

I commend the External Review Panel and the Stats Program Review Committee for their comprehensive examination of the UFV Statistics program, and I recognize and appreciate the preparedness of the committee to take on the work required to implement the actions promised here. I look forward to learning of the progress that these actions will effect in the coming year and beyond.

Action Plan reviewed and approved by:

Information verified by:

Department Head: Ben Vanderlei Date: June 3, 2026 Ben Vanderlei Digitally signed by Ben Vanderlei Date: 2026.06.03 11:26:15 -07'00'

Dean: Ian Affleck Date: June 3, 2026 Ian Affleck Digitally signed by Ian Affleck Date: 2026.06.03 10:59:54 -07'00'