Data Analytics
Final Assessment Report & Implementation Plan
March 2026

Faculty / Affiliated University College	Faculty of Science	
Degrees Offered	Master of Data Analytics (MDA)	
Date of Last Review	New Program - First Cyclical Program Review	
Approved Fields	Artificial Intelligence Finance, Banking and Insurance Generalist	
External Reviewers	Dr. Giuseppe Carenini Professor, & MDS Director, Faculty of Computer Science University of British Columbia	Dr. Yuying Li Professor, Cheriton School of Computer Science University of Waterloo
Internal Reviewers	Dr. Kevin Mooney Associate Dean, Don Wright Faculty of Music	Andris Evans PhD Candidate Schulich School of Medicine & Dentistry
Date of Site Visit	December 11 & 12, 2025	
Date Review Report Received	December 22, 2025	
Date Program/Faculty Response Received	Program Response: January 8, 2026 Faculty Response: February 3, 2026	
Evaluation	Good Quality	
Approval Dates	SUPR-G: March 16, 2026 ACA: April 7, 2026 Senate (for information): April 17, 2026	
Year of Next Review	Year of next cyclical review: 2032-2033	
Progress Report	June 2028	

Overview of Western's Cyclical Review Assessment Reporting Process

In accordance with Western's Institutional Quality Assurance Process (IQAP), the Final Assessment Report (FAR) provides a summary of the cyclical review, internal responses, and assessment and evaluation of the Graduate Data Analytics Program, delivered by the Faculty of Science.

This FAR considers the following documents:

- the program's self-study brief;
- the external reviewers' report;
- the response from the Program; and
- the response from the Dean, Faculty of Science.

This FAR identifies the strengths of the program and opportunities for program enhancement and improvement, and details the recommendations of the external reviewers – noting those recommendations to be prioritized for implementation.

The Implementation Plan details the recommendations from the FAR that have been selected for implementation, identifies who is responsible for approving and acting on the recommendations, specifies any action or follow-up that is required, and defines the timeline for completion.

The FAR (including Implementation Plan) is sent for approval through the Senate Subcommittee on Program Review - Graduate (SUPR-G) and ACA, then for information to Senate and to the Ontario Universities' Council on Quality Assurance. Subsequently, it is publicly accessible on Western's IQAP website. The FAR is the only document from the cyclical review process that is made public; all other documents are confidential to the Graduate Data Analytics Program, the Faculty of Science, the School of Graduate and Postdoctoral Studies (SGPS), and SUPR-G.

Executive Summary

The professional Master of Data Analytics (MDA) program welcomed its first class in September 2017. This one-year, course-based professional graduate program aims to provide students from diverse quantitative backgrounds with the skills needed to be proficient in data analytics and to offer them practical experience applying those skills in an organizational setting. With expansion over the years, the MDA program now offers three specialty fields: Generalist, Finance, Banking, and Insurance (FBI), and Artificial Intelligence (AI). The core courses ensure all students develop fundamental competencies in statistics, computer science, and professional conduct, while the specialty field courses, together with the Experiential Learning Opportunity (ELO) term, provide the practical context necessary for a smooth transition into data analytics careers in the public and private sectors. The program began with 10 students and has grown substantially, with the 2025 class enrolling 43 students.

The external reviewers shared a positive assessment of the professional MDA program. They offer nine recommendations with considerations for further enhancement.

Strengths and Innovative Features Identified by the Program

- ELO with three flexible pathways—Co-op, Major Research Project (MRP), or Community Engaged Learning (CEL) course.
    - Annual Capstone Event, held at the end of the summer term in late August. This day-long event provides a platform for all students to present a poster summarizing their ELO experience.
- Strong integration of professional and career skill development, including a dedicated Business Skills course and a Seminar Series in Professional Career Development.
- Year-round professional engagement and networking, including industry executive talks, Vector Institute visits, and employer sessions.
- Strong emphasis on communication skills, especially communicating analytics to non-technical audiences.
- Small cohort sizes as well as year-round events, create a strong sense of community, peer relationships, and personalized support.

Concerns and Areas of Improvement Identified and Discussed by the Program

- Students desired additional exposure to key applied tools and skills before co-op, including: Power BI, cloud computing, data visualization and project management.
- Limited diversity in international student nationality and gender imbalance in the student body.
- Need to ensure equitable access to ELO opportunities, especially for students facing barriers such as childcare, travel limitations, or health concerns.

- Need for stronger mental-health support strategies (stress management talks, proactive wellness engagement).
- Prospective student confusion caused by Ivey's Master of Management (MM) field of Analytics being advertised as a "Master's in Data Analytics."

Review Process

As part of the external review, the review committee, comprising two external reviewers, one internal reviewer and a graduate student reviewer, were provided with Volume I and II of the self-study brief in advance of the scheduled review and then met in-person over two days with the:

- Vice-Provost, Graduate & Postdoctoral Studies
- Associate Vice-Provost, Graduate & Postdoctoral Studies
- Vice-Provost, Academic Planning, Policy and Faculty
- Director, Office of Academic Quality and Enhancement
- Administrative Coordinator, School of Graduate and Postdoctoral Studies
- Dean, Faculty of Science
- Associate Dean, Graduate & Postdoctoral Studies, Faculty of Science
- MDA Program Director
- Department Chair, Statistical and Actuarial Sciences
- Department Chair, Computer Science
- Associate Chief Librarian and Team Members
- Graduate Committee Members
- Program Faculty Members
- Graduate Program Staff
- Graduate Students
- Program Alumni

Following the site visit, the external reviewers submitted a comprehensive report of their findings which was sent to the Program and Dean for review and response. Formative documents, including Volumes I and II of the Self-Study, the External Report, and the Program and Decanal responses form the basis of this Final Assessment Report (FAR). The FAR is collated and submitted to the SGPS and to SUPR-G by the Internal Reviewer with the support of the Office of Academic Quality and Enhancement.

Summative Assessment – External Reviewers' Report

The report concluded by stating that: *"Overall, the reviewers were highly impressed by the quality of the Western MDA program".*

Strengths of the Program:

- Applications are assessed holistically, with students' backgrounds, abilities, extracurricular activities, and special circumstances considered in addition to their grades.
- The ELO (co-op) takes place over an entire term with students completing their co-ops in a variety of different industries, in-line with Western's emphasis on Experiential Learning.
    - Having the co-op in the last term often results in smooth transitions into full-time employment upon graduation.
- Modern learning spaces, including a large multi-purpose room with state-of-the-art communication facilities for hybrid (in-person + on-line) meetings and talks
- Explicit emphasis on cultivating business communication skills, an aspect that has been consistently recognized and appreciated by students and employers alike.
- Strong retention with only one student withdrawal in the past five years.

Prospective Areas of Improvement for the Program to Consider:

- Greater participation and engagement from additional faculty members in Computer Science and Statistics and Actuarial Science.
- Addition of a course dedicated to data visualization to further strengthen students' communication and presentation capabilities.
- Consider entrance scholarships or financials awards made available to outstanding students with limited financial means.
- Students expressed stress in securing co-op jobs and they wished for more opportunities and support in connecting and networking with industry partners.
    - Possible establishment of an industry advisory board can help achieve this and should be prioritized.

Summary of the Reviewers' Recommendations and Program/Faculty Responses

The following are the reviewers' recommendations in the order listed by the external reviewers.

Reviewers' Recommendation	Program/Faculty Response
Recommendation #1: Support for the Directorship Allowing the director to focus on more strategic issues like creating new streams, curriculum revision and engaging with industry. For instance, a position for an Associate Director could be created. Alternatively, the Academic Committee could be expanded to four members (two from Computer Science and two from Statistics).	**Program: I**n the past the Director working with the Academic Program Coordinator and Career Service Officer were efficient to run and coordinate this program. Only recently, two more faculty members were added to the Academic Committee. Adding an Associate Director position may add extra layered structure that may affect the effectiveness of the program. However, expanding the Academic Committee to include additional 1-2 members from the Department of Computer Science and the Department of Statistical and Actuarial Sciences will provide additional support for the program. This will also improve continuity, distribute workload, and ensure balanced input during curriculum revisions and policy decisions. This structure is particularly useful when the program has multiple streams or frequent curricular updates, and it provides a broader base for industry-oriented initiatives (e.g., advisory input, capstone/project partnerships, internships). In addition, the program benefits from the advice and support provided by the Graduate Chairs of both departments. **Faculty:** Now that the program is mature and the enrollment is growing, the Dean's Office agrees with the program that a larger program committee is the best way to support the program. Increasing the program committee to include two faculty members will expand capacity for tasks like admission assessments. More importantly, a larger program committee allows for more diverse opinions in discussions of curriculum design. Because committee assignments begin on July 1 each year, this will be implemented for the 2026-2027 academic year.

Recommendation #2: Ensure stability and continuity of the MDA Director leadership A longer commitment for this position is recommended (from current 2 years to 3–5 years) to ensure continuity. Also, in the transition between directors a few months overlap would be beneficial. If possible, past directors should stay on the academic committee for 1-2 years.	**Program:** The Program will move toward a longer Director term of 3-5 years. To strengthen transitions, the program will implement a planned handover period with several months of overlap between incoming and outgoing Directors, during which responsibilities, ongoing initiatives, and key relationships can be transferred systematically. The program will also formalize a continuity mechanism whereby past Directors remain on the Academic Committee for 1-2 additional years (where feasible). These measures should reduce disruption between terms, improve future planning, and help maintain consistent program direction. **Faculty:** The Dean's Office agrees with the recommendation to increase the service period for the next director (to be appointed in July 2027). It is anticipated that a member of the expanded MDA program committee might become the next director, which would smooth the transition to a new director. Having the Associate Dean (Graduate) on this committee also will help preserve institutional memory for incoming directors.
Recommendation #3: Curriculum – required Ethics course. Currently the Ethics course requirement is limited to the AI stream. All MDA students should take the Ethics course where they would learn about the responsible management of sensitive data, and become familiar with the legal, ethical, and security issues concerning data, including aggregated data. Another option is to inject a few lectures about ethical issues in data analytics in some of the existing required courses.	**Program:** A practical way to implement this recommendation is to ensure that MDA students receive common training in responsible data practice. One approach is to make the existing Ethics course a program-wide requirement rather than limiting it to the AI stream. This would require a straightforward curriculum adjustment. To keep the requirement flexible, the program could also define a standard waiver mechanism for students who have already completed an equivalent ethics, privacy, or security course. A second approach is to distribute ethics content across other courses by offering a number of lectures and applied activities into existing required courses. In that model, the program would first agree on a concise set of learning outcomes, such as responsible management of sensitive data, privacy and consent, security fundamentals, legal and regulatory awareness, and bias and fairness. This will be discussed and implemented by the Academic Committee of the program. **Faculty:** Students in the MDA program have a full course load of 10 HCE, which is 5 half-courses per term over 2 terms. Adding a required course on ethics means removing another required course or reducing the number of electives. The MDA program committee will need to consider whether this material is best taught in a new course, as updated material in current courses or provided in additional workshops which could be milestones for the program. The Dean's office supports the program's suggestion to explore all options.

Recommendation #4: Curriculum – required data visualization course A standalone data visualization course would benefit students in all streams. Such a course should also cover recent developments in GenAI applied to information visualization, in which the data analyst and the GenAI collaborate in generating and visually presenting their insights.	**Program:** A practical implementation is to introduce a standalone Data Visualization and Communication course that is required (or strongly recommended) for all MDA streams and offered early in the program (in Terms 1 or 2). The course should provide a framework in visualization literacy so that students can use the learned skills in later coursework and the co-op/internship term. The second option is to embed the relevant content into the existing courses. **Faculty:** The MDA program committee will need to consider whether this material is best taught in a new course, as updated material in current courses or provided in additional workshops which could be milestones for the program. Keeping the curriculum of the MDA program current especially in relation to the quickly moving field of AI is of upmost importance to keeping the MDA program relevant and preparing our graduates for the work force. The Dean's office supports the program's suggestion to explore these options.
Recommendation #5: Integrate a systematic process for curriculum revisions Regular assessment of relevance of curriculum in fast changing data science field. For instance, the academic team could have a retreat once or twice a year to discuss possible curriculum revisions.	**Program:** The program will implement a recurring curriculum review process through an academic retreat once per year, where the course instructors and Academic Committee systematically evaluate course content, learning outcomes, tools, and industry demands and trends, and identify priority updates for the next offering cycle. **Faculty:** The Dean's office supports the program's commitment to hold an annual retreat starting in 2026 to discuss changes for the 2026-2027 academic year.

Recommendation #6: Explore new ways for training problem solving skills in the presence of GenAI. Make students aware of new data analysis tools based on GenAI. For instance, run a seminar series where new developments are presented and discussed. Another idea is to create a GenAI for data science forum (e.g., a slack channel) where students and faculty can share news/posts covering recent developments in the area.	**Program:** The program sees potential value in making AI-assisted problem solving more explicit, emphasizing problem formulation, appropriate tool selection, critical evaluation of outputs, reproducibility, and clear communication of uncertainty. This will help keep students informed about new GenAI data analysis tools and workflows. One possible option, subject to capacity and available teaching instructors, would be a periodic seminar series (e.g., once or twice per term) where new developments are presented and discussed. Another suggested option is a community forum (e.g., a Slack/Teams channel) where students and faculty can share relevant news, tools, and best practices, with clear norms around responsible use such tools. The program will assess the feasibility and potential impact of these ideas. **Faculty:** The Dean's office agrees with the plan of the program to explore these new training options in AI. This year already, workshops are being arranged to invite speakers from industry to meet with the MDA students and discuss how AI tools are shaping the work force.
Recommendation #7: Increase the flexibility of course selection to support more student tailored paths through the program. The number of courses that can be substituted should be capped to two to ensure homogeneity of students' paths. Also, increase the set of elective courses to better address the diversity of students' interests as well as to broaden their career options.	**Program:** Where feasible, greater flexibility in course selection can help students pursue more options while still preserving the coherence and reputation of the MDA program. The program will consider whether additional steps are possible to make existing options more visible to students. For example, clarifying and better communicating the current possibility of substituting certain core courses when equivalent undergraduate preparation has already been completed. The program will also review, in principle, the suggestion of placing a reasonable cap on substitutions (e.g., up to two courses) to balance individual customization with a common program experience and consistent learning outcomes. In parallel, the program will consider the possibility of broadening the elective courses over time to better incorporate the diversity of student interests and evolving career paths, while taking into account instructional capacity, scheduling constraints, and overall program objectives. **Faculty:** The Dean's office supports the program's decision to explore more elective choices for the students, especially when some required courses duplicate a student's undergraduate experience. Expanding the list of elective courses will require coordination of multiple departments that would allow MDA students to take their courses or provide instructors for new MDA-directed courses. The Dean's office can help facilitate these discussions with the department chairs and graduate chairs.

Recommendation #8 **Establish entrance scholarships from industry funding or tuition revenues.** These would be offered to attract top applicants.	**Program:** The program will consider the feasibility of establishing a small number of entrance awards supported through industry partnerships and/or other available program resources, including the potential use of a portion of tuition revenues where permissible. **Faculty:** The MDA program has the WSIB Award ($10K), two Environics Scholarships ($5K each) and the Vector Scholarships in artificial intelligence ($17.5K). However, these awards are based on the merit of students already in the program. Entrance scholarships that can be used in recruitment are a good idea. The Dean's office has a development officer that can support in acquiring funding through industry partnerships.
Recommendation #9 **Form an industry advisory board.** This would help with perspectives on fast changing data science from industry perspectives, help students network with industry. Some members of the advisory board could be MDA alumni who have already reached some senior positions.	**Program:** The program will consider establishing a formal mechanism for ongoing industry input, including the feasibility of creating an industry advisory board that can provide regular feedback on curriculum relevance, skill needs, and opportunities for experiential learning. As part of this consideration, the program will explore an appropriate board composition and operating model (e.g., a small group meeting once or twice per year, supplemented by specific consultations as needed). The program also sees potential value in including MDA alumni, alongside representatives from relevant sectors, as they can provide both an employer perspective and a close understanding of the program. In parallel, the program will examine other ways to enhance industry connections for students (e.g., guest talks, mentorship, project sponsorship, and networking events) within available resources. **Faculty:** The Dean's Office supports the formation of an industry advisory board.

Implementation Plan

The Implementation Plan provides a summary of the recommendations that require action and/or follow-up. In each case, the program leader, in consultation with the SGPS and the Dean of the Faculty are responsible for enacting and monitoring the actions noted in Implementation Plan.

Recommendation	Proposed Action and Follow-up	Responsibility	Timeline
Recommendations #1 & 2: Support for the Directorship; and Ensure stability and continuity of the MDA Director leadership	- Expand the Academic Committee to include additional 1-2 members from the Departments of Computer Science and Statistical and Actuarial Sciences. - Establish a longer Director term of 3-5 years. - Implement a planned handover period with several months of overlap between incoming and outgoing Directors. - Formalize a continuity mechanism whereby past Directors remain on the Academic Committee for 1-2 additional years (where feasible).	MDA Program Director The Dean's Office	By June 2027
Recommendation #3: Curriculum – required Ethics course	- Ensure that MDA students receive common training in responsible data practice through one of these approaches: • Make the existing Ethics course a program-wide requirement. • Distribute ethics content across other courses by offering a number of lectures and applied activities into existing required courses.	Academic Committee	By September 2027
Recommendation #4: Curriculum – required data visualization course	- Consider which option is feasible within the current course offerings and available teaching resources (standalone course or embedded in current courses), in consultation with the Departments of Computer Science and/or Statistical and Actuarial Sciences.	Academic Committee MDA Program Director	By September 2027

Recommendation #5: Integrate a systematic process for curriculum revisions	- Implement a recurring curriculum review process through an academic retreat once per year, where the course instructors and Academic Committee systematically evaluate course content, learning outcomes, tools, industry demands and trends, and identify priority updates for the next offering cycle.	MDA Program Director	By September 2026
Recommendation #6: Explore new ways for training problem solving skills in the presence of GenAI.	- Assess the feasibility and potential impact of the options below in alignment with program resources and learning objectives. • Offer a periodic seminar series (e.g., once or twice per term) where new developments are presented and discussed. • Establish a community forum (e.g., a Slack/Teams channel) where students and faculty can share relevant news, tools, and best practices. - Continue inviting speakers from industry to meet with MDA students and discuss how AI tools are shaping the workforce.	Academic Committee MDA Program Director	Plan by June 2026 Implementation by September 2026 Ongoing
Recommendation #7: Increase the flexibility of course selection to support more student tailored paths through the program.	- Make existing options more visible to students. Possible strategies include: • Clarify and better communicate the current possibility of substituting certain core courses when equivalent undergraduate preparation have already been completed (e.g., in orientation materials). • Place a reasonable cap on substitutions (e.g., up to two courses) to balance individual customization with a common program experience and consistent learning outcomes. • Consider the possibility of broadening the elective courses over time to better incorporate the diversity of student interests and evolving career paths, while taking into account instructional capacity, scheduling constraints, and overall program objectives.	Academic Committee MDA Program Director	By June 2026 By June 2027

Recommendation #8: Establish entrance scholarships from industry funding or tuition revenues.	- Examine the feasibility of establishing a small number of entrance awards supported through industry partnerships and/or other available program resources.	MDA Program Director Dean's Office	By September 2027
Recommendation # 9: Form an industry advisory board.	- Develop formal mechanisms for ongoing industry input, including the creation of an industry advisory board. • Explore an appropriate board composition and operating mode.	MDA Program Director	By September 2027