NORTH ISLAND COLLEGE

Program Review

Action Plan

Math-Science Department

NORTH ISLAND COLLEGE

Faculty of Arts, Science, and Management
North Island College
June 2023

Submitted to
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Table of Contents

Preamble

As we continue working through the process of program review and renewal we are guided by the college's overarching, interwoven strategic plans, ***BUILD 2026, Widening Our Doorways, Working Together – the NIC Indigenization Plan*** and the ***Community Engagement Strategy***. The action items detailed in the Action Plan align with commitments articulated in the guiding documents and are part of our continued effort to meet the needs of our diverse community of learners.

Action Plan

Overview

In developing Action Plans, faculty in the Math-Science department worked as three separate groups: Biology with Chemistry, Math with Physics, and Engineering. The Action Plans from the Bio-Chem and Math-Physics contained many similar Action Items, most of which are Department-wide Action Items. Given that we meet and work as a department, the two Action Plans were combined into one comprehensive Math-Science Department Action Plan. This plan contains a total of 33 Action Items: 15 short-term, nine medium-term, and nine long-term. Of this total of 33 action items, 28 are department-wide actions, and five are specific to one or a few disciplines. Each action item aligns with some aspect of the four strategic plans listed above. Five of the action items can only be realized with funding for delivery of more sections of courses and/or funding for release for faculty to develop new programs or courses. The remaining 28 action items can be completed by adding to faculty's existing workload. Realistic timelines have been determined to achieve the action item completion, except where the item is dependent on funding, which is beyond the department's control.

Implementation Plan

The Math-Science Department has triannual meetings in May, August, and December during non-instructional time. While these have been half-day meetings, moving forward these will be full-day meetings, with the second half of the meeting focused on monitoring specific action items. In this way, each action item will have annual monitoring, the work will be spread over the calendar year, and faculty will have time to share best practices and mentor each other. A "Program Review Tracking" spreadsheet has been created for monitoring purposes. While the Chair will remain the main conduit between faculty and senior management, a lead faculty member will take responsibility to:

- Remind faculty of the action item work to be completed, and dates for reporting
- Provide instructions on how to complete the task
- Collate information to document completion of the action item.

It is expected that the work, communication of the work and its results and monitoring will become routine.

Table 1. Timing of reporting and sharing of information to document action item completion at triannual department meetings

Meeting Date	Location of Action Item in the Plan	Action Items to review
August	Short-term	#2: Create Learning Outcomes for all courses – 15 minutes for checklist. #7 PD Sharing by five faculty #9, 11 Sharing information about community connections; students in research and employed in local organizations in their chosen field. #15 Determine current state of curriculum around climate change.
	Medium-term	#3 Map out and track progress of One Year Certificates #4 Create and implement a Department Indigenization Plan (sharing by five faculty on their activities; written reporting by other faculty, PD planning) #2 Start the work to develop Program Learning Outcomes for Associate of Science diploma
December	Short-term	#3: Reporting on Course Survey of student feedback (sharing from half the faculty = 8 x 5 minutes) #4: Collect evidence of student learning (sharing from all faculty = 16 x 5 min = 1.5-2 hour session)
	Long-term	#5: Development, reporting and tracking of success from 'Orientation to Science at NIC' Lab orientation modules.
May	Short-term	#3: Each course has a Course Survey to collect student feedback (sharing of highlights from half the faculty = 8 x 5 minutes = 40 minutes) #4 Provide evidence of student learning (sharing from five faculty annually 5 x 5 = 25 minutes); others to provide written information for QAPA
	Mid-term	#2 Continue the work to develop Program Learning Outcomes for Associate of Science diploma

Standing Items on Department Meeting Agenda:

- Short-Term #5: Lab Renovations
- Short-Term #15: Climate Change activities ongoing in our classes
- Medium-Term #5: Progress of Associate of Science options
- Long-Term #1: Math support activities and progress
- Long-Term #2: Report tracking of aligning course content to core competencies

Accountability Plan

For each action item the lead person(s), will be responsible for seeing the action item through to its conclusion, and documenting completion, or ongoing work in the Program Review Tracking spreadsheet or by reporting at Department meetings. These individuals will be expected to gather data, form working groups, schedule meetings, contribute to the completion of the action item, monitor progress, and provide updates as required. They will be held accountable and will be required to provide a written update when the one-year follow-up report is written.

Resourcing the Plan

The complexity and priority of any particular action item will dictate the resources needed to reach the desired outcome. While much of the work required will be completed as routine duties, the department, in collaboration with the dean's office, will develop a plan to secure additional resources as needed.

SHORT-TERM ACTION ITEMS (To be completed within a year): Math-Science

#	Desired Outcome	Actions	Recommendation Reference[1]	Lead Person(s)	Start Date	End Date	Resources	Monitoring	Results
	What do you want to achieve?	*What actions will be taken to achieve desired outcome?*	*What final report recommendation was this desired outcome derived from?*	*Who will be responsible for leading this action?*	*Month/year*	*Month/year*	*What resources will be required to complete this action? (e.g., money, software, consultants, equipment)*	*How will you track the implementation of your action?*	*How will you know that you have achieved your desired outcome?*
1	Maximize student access on all campuses by reinstating face-to-face lectures on all campuses	Ensure F2F lectures are provided on all campuses; hyflex if F2F is not possible. Ensure instructor presence on all campuses.	External Review #1 (B-C) Recommendation #1 (S9 and S10)	Sandra and Alex	During timetable building for 2024/225 academic year	After release of the timetable for 24/25	Money for extra sections if maintenance of online delivery is desired by administrators.	The Dean's acceptance of this Action Plan and subsequent loading sheets/timetable will demonstrate whether the recommendation has been accepted.	F2F classes are available on all 3 campuses (e.g. Bio 160/161 and Bio 060/110.)
2	Support Program Structure and our commitment to learners, ensure currency in outcomes.	Update Learning Outcomes for all courses. Each Course supervisor to do one course in 23/24 and others in subsequent years	Self Study #2 QAPA	Sandra as lead; each course supervisor does their own course	June 2023	June 2025	Support from CTLI	Put standing item on May Department meeting agendas to check off each course and remind those who have yet to complete the task.	All courses have updated learning outcomes.
3	Support Build 2026, 2.1 Student assessment of	All instructors to use CTLI course survey through anonymous	External Review #9 #12	Darren as lead, all instructors.	Fall 2023 courses	Continual	Blue Software integrated with Brightspace (eventual).	Half of the Faculty to share highlights of evaluations and	Student feedback is documented each term and steps taken to

[1] Blue Recommendations are from the Chem-Bio Final Report; Purple Recommendations are from the Math-Physics Report

#	Desired Outcome	Actions	Recommendation Reference[1]	Lead Person(s)	Start Date	End Date	Resources	Monitoring	Results
	the quality of instruction; Widening Doorways 2.1b5: formalize data gathering processes for feedback on teaching and learning. QAPA - Accountability	Brightspace surveys. Stress the importance, and anonymity, of completing these evaluations for high response rate (+bonus marks).		Darren will send reminder email twice a semester- mid semester and at least three weeks before the end of term (for both mid semester and end of semester surveys)			Until then, CLTI to provide Course Survey and instructions to load into Brightspace until external software added. Online reputable education sites that discuss anonymous student evaluations. https://teachingresources.stanford.edu/resources/how-to-use-anonymous-surveys-to-get-student-feedback/	actions that have been implemented to address student feedback at one of either the December or May meetings	address feedback is shared.
4	Student learning is supported, and evidence of student learning is collected.	Collect evidence of student work (e.g., unique learning experiences, types of alternative assessments, hands-on learning activities)	Self Study #16 and #20 QAPA	Aisling to collect responses from each instructor	Fall 2023	Continual, with an emphasis in 2024 for QAPA	Document what work is being done in a Program Review Spreadsheet	Each faculty member will monitor their own courses and report in writing for May Dept. meetings. Five faculty to present one project each May.	Documentation of evidence of student learning. Present findings annually at the May Department Meeting as part of short term item #16 (Support Program Structure and Collective Impact)
5	Support increased enrolment	Build new lab space.	External Review #3, 5, 7	Aisling, Garnet	Spring 2024	Fall 2024	Funding from Dean's office; support of lab technician	Department meeting updates	Lab space is ready for course delivery
6	Support Practices; support building classroom community	Revise all courses to continually incorporate more	QAPA Self Study #16 and #20	Sandra. All faculty to do.	Sept. 2023	ongoing	CTLI Indigenous Education Advisor,	Dec. 2023 Department meeting	Annual sharing event as part of Dept. meeting

#	Desired Outcome	Actions	Recommendation Reference[1]	Lead Person(s)	Start Date	End Date	Resources	Monitoring	Results
	and Indigenous ways of learning	inclusive and student-led pedagogical designs					Working Together Working Group.		
7	Expand dual credit offerings with local high schools	Establish a small working group (including faculty, Youth and Community outreach staff, advisors, Dean, Registrar's office, school district representatives) to review and renew existing dual credit agreements with local school districts Explore how the 24/25 timetable could support dual credit courses	External Review #5 #5	Michael , Aisling, Alex	Winter 2024	Continual consultation with high school counsellors	Data from Institutional Research to determine trends in dual credit enrollments. Access to local high school teachers, administrators, and counsellors.	Minutes from working group meetings. Updates from department chair on progress	A measurable increase in the number of dual credit course offering agreements between NIC and local high schools and increased numbers of students registered for dual credit courses at NIC.
8	Better communication between advising and faculty.	Hold an annual meeting (May-June) with the advisors and Indigenous Navigators and one representative from each subject area in the department to share information about courses (particularly known	External Review #10 #10	Alex, Georgie, Jennifer	March 2024	June 2024	Create a summary sheet for each discipline to be provided to Advising highlighting the courses, their prereqs and examples of course progressions.	Meetings are scheduled; minutes recorded. Add a question to the Program Survey (see Mid-term Action Item #) to solicit student feedback on advising.	Analyze the poll results.

#	Desired Outcome	Actions	Recommendation Reference[1]	Lead Person(s)	Start Date	End Date	Resources	Monitoring	Results
		areas of student confusion) and to learn about the work of advisors.							
9	Improve and share currency of instructor knowledge	Create and maintain annual PD sharing event	#11	Jason	August 2024	ongoing	Compile information into Program Review spreadsheet	Half of the Faculty to share reports of PD activities at the August meeting	PD activities are documented in Program Review spreadsheet
10	Develop "Pathways" documents to advertise existing programs	Revitalize existing pathway document and ensure current material presented.	External Review #11	Aisling	May 2024	ongoing	Support from marketing and advising. These documents are already created, but were not used by advising	Regular check-ins with Advising and Marketing (once a year)	Materials are being shared with prospective students.
11	Support "Knowledge Networks" component of the Community Engagement Strategy by bringing NIC to the community and bringing community into the classroom.	Continue and increase faculty engagement with community boards and organizations. Share information about local organizations, bring in guest speakers so students learn about career opportunities, Connect with local schools (Math/Science Outreach events in	Self-Study #10 Self-Study #9	Sandra, Georgie, Amber, Natalie	May 2024	ongoing	Community Engagement staff; Danielle Hoogland, to collaborate on presentation of results, Use info from faculty profiles.	Annual sharing of document with department in August	Document that provides evidence of faculty providing outreach to local communities, # of guest lectures

#	Desired Outcome	Actions	Recommendation Reference[1]	Lead Person(s)	Start Date	End Date	Resources	Monitoring	Results
		addition to Math Contest)							
12	Support "Community Engaged Research" in the Community Engagement Strategy	Continue to recruit and involve students in community research and projects (e.g. forage fish and kelp projects)	Self-Study #8	Georgie, Amber to track	May 2024	ongoing		Track on Program Review Spreadsheet Annual sharing of document with department in August	Students employed in NIC research and with local organizations
13	Support Learning Communities and Program Structure	Engage 2nd year students to talk with 1st year students; recruit for Peer Tutor Program	Self-Study #15	Darren, Aisling, Georgie,	Sept. 2023	ongoing	Send email with link to peer tutoring, connect with second year students to first year students (events, class room visits)	Track interactions on Program Review spreadsheet.	Number of events; number of peer tutors from second year
14	Support Climate Change Practices	Examine department practices to assess opportunities for low-waste, low-energy, and other sustainable practices	Self-Study #18	Amber, Garnet, all faculty who host events	August 2023	Ongoing	Sustainability committee recommendations	Track on Program Review Spreadsheet Department Sustainability Committee rep to share Department activities with the committee	Ongoing goal will shift as knowledge and technology shifts
15	Support Climate Change learning	Collate existing curriculum that addresses climate change, build recommendations for long term goals.	Self-Study #18	Amber	May 2024	Ongoing	Existing curriculum	Annual check in at department meetings	Produce list of existing courses and topics points that address climate change

MEDIUM-TERM ACTION ITEMS (To be completed in 1-3 years): Math-Science

#	Desired Outcome	Actions	Recommendation Reference	Lead Person(s)	Start Date	End Date	Resources	Monitoring	Results
	What do you want to achieve?	*What actions will be taken to achieve desired outcome?*	*What final report recommendation was this desired outcome derived from?*	*Who will be responsible for leading this action?*	*Month/year*	*Month/year*	*What resources will be required to complete this action? (e.g., money, software, consultants, equipment)*	*How will you track the implementation of your action?*	*How will you know that you have achieved your desired outcome?*
1	Support Program Structure and our commitment to learners	Develop Program Learning Outcomes for the Associate of Science Program with the whole department	Self-Study #1	Jennifer, Aisling, Alex	May 2024	June 2024	Support from curriculum committee and CTLI	August 2024 department meeting	Program learning outcomes will be in place
2	Support Program Structure and our commitment to learners	Develop a Program Advisory Committee for the Associate of Science Program: determine structure, terms of reference, and biannual meeting schedule	QAPA #3, #4	Aisling (CV), Sandra (CR) Michael (PA)	May 2025	ongoing	Investment from external members	Minutes from biannual committee meetings	Improved structure of the program, improved accountability.
3	Create new programs	Create one-year certificates for each discipline that match those programs at 4-yr institutions. This could be packaged into 2-yr diploma like Marine Biology.	External Review #2 Self-Study #4 #2a (S5, S12, S13)	Jennifer (physics), Jason (math), Georgie (bio), Darren (chem) Alex	May 2024	June 2026	Support from curriculum committee and CTLI	August 2024 department meeting	Program is created and promoted on NIC website and marketing materials

#	Desired Outcome	Actions	Recommendation Reference	Lead Person(s)	Start Date	End Date	Resources	Monitoring	Results
4	Create and implement a Department Indigenization Plan	Have a department-wide meeting with the Indigenization Working Group to prepare to show our existing activities and get guidance to write a Department Indigenization Plan. Develop Cultural Safety Orientation Sessions as part of Island Pre-Health (annual delivery – likely Village Workshop)	Self Study #22 Section H	Aisling	August 2023	June 2025	Application for Group PD to spend a day together to learn about and develop a plan.	August Department meeting session for faculty to report on Indigenization activities in class. Student polling of experience in Island Pre-Health program	A department indigenization plan is written Regular offering of Cultural Safety as part of fall orientation session for Island Pre-Health
5	Have an Associate of Science option for each subject area (not just Bio) – Tied in with action item below – to improve recruitment and course planning	Identify courses to include, course schedule, whether new courses are required.	#2b (S2 and S7)	Physics – Jennifer, Math - Jason	January 2024	June 2024	Support from Curriculum Committee	Report progress at dept. meetings	The new credential is open for registration. Have a written document (and info on webpage) for dept. chair and dean to reference when scheduling courses
6	A commitment to offering second-year courses on a consistent schedule to make NIC a more attractive and viable option for both domestic and international learners.	Identify funding possibilities to support a reliable schedule of second year course offerings.	#6, #2b	Jennifer, Jason, Sandra	January 2024	Ongoing	Financial commitments from Dean's office and possibly OGE.	Meeting minutes.	Increased numbers of students staying for two years in Math/Physics/Compute r Science Increased enrollments from both domestic

#	Desired Outcome	Actions	Recommendation Reference	Lead Person(s)	Start Date	End Date	Resources	Monitoring	Results
		Identify a schedule of second year course offerings that is financially feasible and of utility to learners.							and international markets in these subject areas More students engaged in research projects
7	Support Program Structure, create a full second year complement of courses	Create a new analytical chemistry course , offer 2nd year physics and math courses	External Review #3 Self-Study #6	Darren, Sherrie, Jennifer, Jason, Alex	May 2025	August 2025	Need funding for course development release and to offer a new course delivery, and for marketing, commitment from administration to run 2nd year courses	During preparation of loading sheets	Course is offered and recruitment for the course is supported
8	Create multiple start dates for courses to provide flexibility for students.	Offer Chem 110/111 Bio 160/161, Mat 181/182 multiple times per year. E.g. typical Fall courses in Fall and Winter, typical Winter courses in Fall, Winter and Spring Intersession. Offer: BIO 110-060 as HyFlex or evening/weekend course F2F.	External Review #7	Sandra, Georgie and Alex	Spring 2025	ongoing	New lab space is needed first, or offer in CR or PA, then budget for extra sections, marketing	During loading sheet preparation	Courses implemented
9	Develop new programs and credentials.	Develop a Certificate for Elementary Education Pathways	External Review #2 Self-Study #4	Michael Willers	Fall 2023	Summer 2025	Support from Curriculum Committee with program	Quarterly updates	Certificate of Elementary Education is open for registration

#	Desired Outcome	Actions	Recommendation Reference	Lead Person(s)	Start Date	End Date	Resources	Monitoring	Results
			#3				development, dean's office.		

LONG-TERM ACTION ITEMS (To be completed in 4-7years): Math-Science

#	Desired Outcome	Actions	Recommendation Reference	Lead Person(s)	Start Date	End Date	Resources	Monitoring	Results
	What do you want to achieve?	*What actions will be taken to achieve desired outcome?*	*What final report recommendation was this desired outcome derived from?*	*Who will be responsible for leading this action?*	*Month/year*	*Month/year*	*What resources will be required to complete this action? (e.g., money, software, consultants, equipment)*	*How will you track the implementation of your action?*	*How will you know that you have achieved your desired outcome?*
1	Increase student access for math support on each campus, (close to faculty offices and labs if possible)	Find available space (classroom or lab) where students can meet and work collaboratively and have easy access to math support and faculty for help. Improve communication with Math Support to better utilize this existing resource (move math support into Math/Science department)	#8	Jason Diemer (CR), Natalie	Fall 2023	ongoing	Available space (classroom or lab), expand math support hours and space (to allow more than one student to access at a time)	Meeting with LLC (math support), faculty reports at department meetings	Evidence of more students accessing study spaces and math support

2	Support Program Structure	Align course content to core competencies from professional associations to determine where content can be reduced while ensuring transferability and learning of the core competencies. Hold a session during one department meeting to determine methodology.	External Review #4 Self-Study #3	Jennifer	May 2026	June 2026	Information on Core Concepts from Professional Associations	Dept. meeting reporting and tracking on Program Review Spreadsheet	All courses
3	Create new programs	Create a two-year Marine Biology Diploma	External Review #2 Self-Study #4	Amber and Alex, Georgie	May 2024	September 2024	Money for release to develop the program. Money for production of publications and online promotional material	Department meeting report on progress	Program is approved and supported by Marketing
4	Publish a 2-year schedule of courses.	Establish a working group to align course offerings with program renewal plans. Consult with advisors, scheduler, faculty, and lab techs to ensure coordination of	External Review #6	Alex, Aisling, Sherrie	Spring 2023	Spring 2024	Support from scheduling office to prepare loading sheets for two years	Updates from department chair on progress	Establishment of 2-year schedule of courses that aligns with program goals.

		course offerings in 2-year block.							
5	Support Learning Community and Practices	Develop "Orientation to Science at NIC" Module to include lab prep activities.	Self Study #12 and 17	Aisling, Garnet	May 2024	Ongoing	Time, lab availability during first week fall semester. Work with college staff to promote orientation sessions. Faculty and lab tech involved in sessions (CV, CR and PA)	Report at December Department meeting. Collate attendance.	A regular session offered every fall orientation, students feel more supported in labs, better student success in labs.
6	Support "Knowledge Networks" component of the Community Engagement Strategy	Develop a Sustainability Club	Self Study #13	Amber		Ongoing		Number of meetings and events each year	Increase in student engagement
7	Collective Impact	Create a Global Research Sharing Session in collaboration with BSN students and IPH 3rd year students (IPH 350 - Applied Research)	Self Study #21	Aisling	March/April 2026	Ongoing	Collaboration with BSN program (4th year students)	Annual review of program delivery	Regular implementation annually
8	Provide unstructured space for students to gather and work on their own time would be more valuable.	Renovation of the labs will result in a "common" room	External Review #8	Alex, Aisling, Jason	Spring 2024	Fall 2027	Renovation funding, architects and design team	Follow design plans to ensure it is included in the plans.	Students will use the area
9	Support Program Structure – ensure lab skills meet minimal	Purchase an NMR machine and write lab activities into	Self-Study #7	Darren, Sherrie	August 2024	Ongoing until equipment is purchased and implemented	Money for capital expenditure		NMR has been added to lab activities.

	expectations of receiving institutions	Chem 245 lab manuals				into learning activities			