

Implementation Plan

1 - Cover memo

Department of	<u>Physics</u>	Year of program re- view	<u>2024</u>
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To: Deputy Provost and Vice-Provost, Student Life and Experience
From: Faculty Dean
Faculty of: Arts and Science
Date: September 15, 2026

Please find enclosed the finalized Implementation Plan for the Department cited above as part of the academic program reviews process. This Plan was duly discussed with:

- ☒ The Department Chair
- ☒ The Dean of Graduate Studies (if applicable)

As mentioned in the Concordia University Academic Program Review Manual, 6th edition, September 2024, the Faculty and Department will follow-up on this Plan in two years, when prompted by your office.

Sincerely,

Faculty Dean's name Pascale Sicotte

Faculty Dean's signature *Pascale Sicotte*

PROGRAM REVIEW DOSSIER

DEPARTMENT OF PHYSICS

The review was initiated in 2024.

The dossier contains the following:

Document	Finalized on:
1. Department Program Review Committee (DPRC) Reports	August 2025
2. Report from External Evaluators	October 5 th , 2025
a. Dept. response to EE report	November 30, 2025
3. University Program Review Committee (UPRC) Report	April 27, 2026
4. Summary chart	June 4, 2026
5. Dean's Implementation Plan	September 15, 2026
6. Progress Report	To be initiated Fall 2028

Note:

- *The External Evaluators' visit was held from September 8 to 10, 2025.*

Implementation Plan

2 - Summary

The Department of Physics is committed to preparing students for careers or advanced study in the theoretical, applied, and biological aspects of physics with research areas including Nanophysics/Quantum Physics, Biophysics/Bio-medical Physics, and High-energy/Particle Physics. The Department participates in the Institute for Co-operative Education. Students in the co-op program gain valuable job experience and discover career opportunities in addition to regular coursework. The Department participates in the Kaié:ri Nikawerá:ke Indigenous Bridging Program for BSc Physics students which provides alternative entry to eligible Indigenous students with non-traditional academic careers to transition to the program of their choice within the Department of Physics. At the undergraduate level, the Department offers a major, specialization, and Honours in Physics and a minor in Biophysics, and a MSc and PhD in Physics as well as a MSc/MASc in Nanoscience and Nanotechnology at the graduate level. The Department has just introduced the Microprogram in Computational Physics and will launch a new minor in Physics in 2026. As of 2024, the Department has 17 tenured or tenure-track faculty (three jointly appointed with other units), with 2 new hires arriving in 2025. There are 3 Tier 2 CRCs in the Department (2 joint with other units). Faculty members are associated with the Centre for Nanoscience Research and Centre for Research in Molecular Modeling. The Department staff consists of 3 technical staff members and 3 administrative staff (shared Department Administrator, Graduate Program Assistant/Assistant to the Chair, and Undergraduate Program Coordinator/Academic Advisor). In the period under evaluation, Physics offered 61 undergraduate and graduate courses to approximately 198 undergraduate and 50 graduate students per year. Average class sizes, excluding large online sections which include between 400 and 1300 students, are 22 at the 200-level, 17 at the 300-level, 9 at the 400-level, 3 at the 600-level and 2 to 3 at the 700- and 800-level. Approximately 15% of Physics courses are taught by part-time faculty members.

The Department of Physics has strengths in the innovative development of multidisciplinary programs and an inclusive and supportive learning environment with formal and informal advising which distinguishes it from peer institutions. Increasing enrollment and large service classes combined with a growing reputation increases the Department's impact above its size. Physics enjoys a strong relationship with the Science College which increases the unit's ability to showcase the relevance of Physics. In terms of the Faculty of Arts and Science Five Commitments, Physics is committed to cultivating a sense of belonging and community among their students and to training students to tackle complex problems. The Department is facing challenges to build and sustain its strengths without overextending. We encourage continued and even increased collaboration with other units in the Sciences sector including academic units and research centers. There may be a limited ability to expand the scope of training for students given the amount of required content to cover, minimum required class sizes, and the need for costly maintenance of technical capacity including lab technicians and equipment.

The Faculty of Arts and Science has reviewed the Department Program Review Committee, External Evaluator, and University Program Review Committee reports and provides the following recommendations for implementation. Joint solutions to shared issues among Science units are

encouraged wherever possible. A recommendation to standardize lab credits and hours which emerged from the Program Reviews in Physics and Chemistry should be examined across all Science units where feasible as a strategy to improve student experience and success in introductory lab courses.

Implementation Plan

3 - Recommendations

Recommendations	Prioritized time-line for completion	Responsibility	Dean's comments and resource implications
1. Develop a strategy to address student experience and success in CEGEP-level courses and associated labs (PHYS 204, 205, 206, 224, 225, 226).	Short to long-term (1-4 years)	Department, FAS, CTLS	Careful analysis of the use of resources will be reviewed by the Dean to see if redistribution is possible for additional teaching lab support (UPRC, EE-9, DPRC-11). The UPRC and EE in PHYS and CHEM recommend examining potential standardization of credits and hours for labs across Science units in FAS.
Rationale: This recommendation builds on UPRC-1, EE-5, DPRC-4.1, DPRC-5.1, DPRC-7.1, DPRC-7.8, DPRC-9.1, DPRC 10.2, and DPRC-11.5. The Department is encouraged to consider pedagogical, technological, curriculum, and technical/laboratory elements of introductory Physics courses.			
2. Examine means to improve curriculum coherence and better communicate the structure of programs and course requirements.	Mid to long-term (2-3 years)	Department, CTLS, UCS, FAS	UPRCs, EEs (CHEM), and DPRCs (PHYS, BIOL) in several Science units recommend enhancing first year students' orientations as provided by the University or Faculty.
Rationale: Building on UPRC-5, EE-1, EE-2, EE-10, DPRC-7.4, DPRC- 7.7, DPRC- 7.10, DPRC- 10.3, and DPRC-10.4. The programs offered support core disciplinary objectives, do not have			

significant gaps or redundancies, and have different goals and requirements. DPRC recommends the Department systematically consider students' progression through programs and related learning objectives and help clarify differences between the major, specialization, and Honours programs for entering students. At the graduate level, the DPRC recommends incorporating program learning objectives more explicitly into student milestones. The EEs recommend and the Department agrees that developing master course outlines may help.			
3. Review the Biophysics Minor and open discussions with the Department of Biology on potential collaboration to expand biophysics programming.	Short to mid-term (2-3 years)	Department, BIOL, FAS	While the Department proposes changing the unit's name to include Biophysics, the External Evaluators suggest caution.
Rationale: UPRC-2, EE-1, and EE-2 suggest increased collaboration in order to expand resources and offerings for developing Biophysics. The Department expresses some reservations with developing a fully interdisciplinary graduate program, but the EEs suggest this is a unique offering in Quebec and fits well with the Department's emphasis on Physics for society.			
4. Increase professional development training for Physics undergraduate and graduate students leveraging existing Departmental and SGS resources, including GradProSkills, Departmental colloquia, conference travel support, and potential new workshops on ethical standards, professional conduct, and scholarly engagement. Alumni might be useful to increase the number of speakers, and access to professional opportunities, in industry and medical fields.	Short to medium-term (1-3 years)	Department, SGS, CAPS, GradProSkills, Student Success Centre	
Rationale: EE-11, UPRC-6, DPRC-7.8, DPRC- 7.11, DPRC- 8.3, DPRC- 8.4, and DPRC- 7.16 address means to increase the preparation of Physics students for future careers.			

5. Critical assessment of the MSc/MASc Nanoscience and Nanotechnology to be undertaken in consultation with Chemistry and Biochemistry, GCS, FAS, and SGS.	Short term (1-2 years)	Department, CHEM, FAS, SGS, GCS	While the MSc Nanoscience and Nanotechnology was not technically part of the Program Review, the feedback is useful to consider the program's future.
Rationale: UPRC-4, EE-7, and EE-8 address issues with the development of this program.			
6. Expand discussions within the Department of Physics about the feasible range of course offerings at the undergraduate (DPRC-5.2, 7.3, 7.4, 9.2; EE-2, EE-3, EE-4) and graduate level (DPRC-7.10, EE-2, EE-4) in order to balance student demand, faculty research expertise, and collaborations with other units at Concordia and other universities in Montreal.	Mid to long-term (2-5 years)	Department, Montreal Universities	
Rationale: DPRC and EE recognize need for increased breadth in course offerings at the undergraduate and graduate levels, as well as new expertise with new hires. With tight constraints on course sections and minimum enrollments, creative thinking is necessary to maximize course offerings including inter-university collaborations (EE-4, UPRC-3).			