



Senate Committee on University Planning

Academic Review Summary: Department of Physics

Site Visit	October 13-14, 2021 (virtual via MS Teams)
Informal Response to Planning	February 7, 2022
Formal Response	April 4, 2022
Implementation Update	fall 2023
Midterm Review	winter 2026

Review Team Members:

- Dr. Peter Williams, Professor, Physics Department, Acadia University (Review Team Chair)
- Dr. Amanda Cherpak, Director of Clinical Medical Physics, Nova Scotia Health Authority; Associate Professor, Radiation Oncology, Dalhousie University
- Dr. Joshua Kurek, Associate Professor, Department of Geography and Environment, Mount Allison University

Note: The following recommendations are taken mostly verbatim from the external review. For context they should be read in conjunction with the department’s formal response.

Recommendations of the Academic Program Review

- 1) Increasing pressure on the first-year experiential courses:
 - a. Reduce TA load by utilizing on-line homework systems associated with textbook and/or consider group lab activities to reduce marking demand of TAs
 - b. Work with Dean to secure funding for the remaining shortfall in TA budget
 - c. Consider moving to PC based workstations instead of Mac. This will reduce the cost of purchasing the hardware and may enable central computing services to assist in the maintenance and upkeep of the machines.
- 2) Gemini Observatory:
 - a. Work with the development office to see if funding can be secured for the facility
 - b. Encourage summer students to apply for experiential learning funding to offer outreach programs using the facility
 - c. Consider removing the astronomy faculty member from the headship rotation to allow them to more fully take advantage of the recruiting and outreach opportunities associated with the facility

3) Curriculum:

- a. Collaborate with the Math and Computer Science Department to allow physics students to get vector calculus and differential equations in second year on a consistent basis
- b. Require physics students to take linear algebra from the Math Department
- c. Eliminate the mathematical methods course if a. and b. are implemented
- d. Explore the potential for offering Aviation related topics across the curriculum, e.g. The Physics of Flight, lab exercises on lift and drag, and examples that explicitly mention the relevance to aviation – relative motion for example.

4) Research/Teaching collaborations:

- a. Invite interested math profs to make research presentations to potential honours students who may be interested in more mathematical treatments of physics
- b. Explore the possibility of developing a geophysics course that could be cross listed with mathematics and/or support the Aviation BSc program

5) Department Social Life:

- a. Examine what events were held in the past
- b. Determine which ones should be retained, modified, eliminated
- c. View the events through an EDI lens to ensure they are welcoming for all and attract diverse students
- d. Explore the possibility of outreach connected to these events
- e. Encourage faculty to engage and attend student-led events

6) Library:

- a. Invite the physics subject area librarian annually to a department meeting early in the academic year to revitalise the connection to the library

7) Planning for the future, consider:

- a. In what area will the next tenure-track hire in the department be?
- b. How will the department position itself to be most able to increase its diversity, both of faculty and students?
- c. What synergies might there be with other academic programs?
- d. How involved will the department be in the aviation program?

8) Course release:

- a. Ensure that the bargaining unit and the Board are aware of the impact such releases have in smaller academic units.