

Douglas College Physics Department Program Review (2015) Excerpt – Risks and Recommendations

Risks

The College has decided to expand its Engineering options. This will help grow this department, as it will have to offer more courses and a greater range of courses. As of September 2015 there were 8 people registered in the new Engineering Foundations and Engineering Essentials programs at the College. There are plans underway for the renovation of the 1600/0600 levels that will have a dedicated Engineering Lab space. As of September 2015 this is in the blueprint phase. The new program needs more dedicated lab space, as there is no room in the current Physics and astronomy labs. If this expansion does not occur, it will not be possible to run this new program.

Transfer status for the new Engineering program to SFU is proceeding well. Dean Brian Chapell has met with representatives from the Applied Science and Engineering Science at SFU. Nakul Verma from our department and Barbara Allen from CSIS are continuing the discussion and work to make it easier for students to transfer to SFU. While most of the new courses have been designed and are working their way through the BC Transfer system, this work is not yet complete, and there are a few courses left to be designed. UBC has been in flux the last two years as they hired a new Dean of Applied Science. Dr. Marc Parlange has stated his goal to change offerings at UBC, but for the last two Articulation Meetings there have been no specifics offered. UBC is not accepting any new transfer requests from any college or institution at this time. Given the flux in the Presidential leadership at UBC it is unlikely that a clear direction will emerge from this venerable institution for at least a year. The department and Dean will actively pursue open lines of communication to avoid a risk of difficulties in course and program transfer.

Space is an issue at both campuses, but in particular at Coquitlam where Earth and Environmental Sciences (GEOL and SCIE) and Physics share one lab room. This puts a huge constraint on timetabling and expansion. The proposed Evergreen Skytrain lines is still scheduled for Fall of 2016 and when complete is expected to bring about an increased demand for courses. Physics and Earth and Environmental Sciences need their own separate lab space at the Coquitlam campus.

Teaching via videoconference has helped Physics to continue to offer some Physics courses at Coquitlam, but it is not ideal. Face-to-face is still the preferred method of delivering courses. The Physics department was the first to offer courses via videoconference and while the Math and Chemistry departments have done and continue to do so, the small number of courses is an indication of the risks and challenges in this method.

Experiential learning is a formal goal of Douglas College. The structure of the Physics labs means that lab staff, not faculty, conducts the vast majority of the labs. In Biology and Chemistry each faculty member spends one quarter of their time in the lab. In Physics there is a single lab section taught by one faculty member each academic year. This has led to huge challenges in keeping the labs current and relevant. The College needs to provide more time for faculty to be in the lab. This will increase the overall costs of the department but will reap many benefits in addition to reducing the risk of burnout in the employees.

Strong student demand has meant that there are now three full-time Physics faculty and two full-time twelve-month lab technicians making it the largest it has been since the Douglas-Kwantlen split more than 30 years ago. But having three faculty members means that it is still a small department, in particular given the large range of courses that are offered. Scheduling is a challenge with both faculty and staff

having difficult schedules spread across the two campuses and into the evening. Having to teach day and night is leading to fatigue and the risk is that the faculty and staff will simply be unable to continue to meet student demand for night courses at both campuses and in both semesters. Increased funding for new courses would allow the hiring of new people to help share this burden.

Summary/Recommendations

Physics continues to be an essential part of the Faculty of Science and Technology. Strong student demand has allowed it to increase to the biggest it has been by continuing to offer its traditional courses in Physics, Engineering and Astronomy.

The transfer credit miss match between Douglas and SFU is being addressed by the addition of new courses that will be offered starting in the summer of 2015.

With one three full-time faculty and two full-time lab staff, it is still a small department and that leads to challenges in scheduling and a lack of flexibility.

As the new Engineering Foundations and Engineering Essentials program continues to unfold, that expansion will also the department to hire another faculty member and more laboratory staff.



**DOUGLAS COLLEGE COMPREHENSIVE PROGRAM REVIEW (PR)
RESPONSE FROM THE
OFFICE OF THE VICE-PRESIDENT, ACADEMIC AND PROVOST**

Douglas College policy A18.01.01 Program and Service Review requires a follow-up plan be developed by the Vice President, Academic as the final step in the PR process.

FACULTY (Lead Dean)	Science and Technology
Department / Program	Physics
Date submitted	18 th April 2019
External Reviewer (ER)	D. Barbara Frisken, Department of Physics, SFU
Review triggered by	<input checked="" type="checkbox"/> Policy (schedule) or <input type="checkbox"/> Emergent concerns <input type="checkbox"/> Changes in discipline/field/licensing <input type="checkbox"/> New program development <input type="checkbox"/> Demand/enrolment concerns <input type="checkbox"/> Other (<i>specify</i>)
Date of last formal PR	Unknown
RESPONSE/RECOMMENDATIONS	
SUMMARY RESPONSE	<p>The Physics department is a small, well-functioning department delivering courses in Astronomy, Engineering and Physics. Its curriculum remains current and cost-effective in delivery.</p> <p>Many of the risks identified in the Self-Study have been mitigated since its writing. One major development since 2015 has been the launch of the new Engineering programs. Working through the provincial Articulation Committee, the Physics department has also contributed to the creation of a Common Core for first-year Engineering students, ensuring that students are generally less dependent upon the outcome of course-to-course transfer credit requests.</p>
All PR recommendations accepted?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Many are now stale-dated (no longer applicable)
All ER's recommendations accepted?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A [Note: No ER submitted]
VPA's RECOMMENDATIONS In particular, Physics should focus on the following:	<ul style="list-style-type: none"> • The department is encouraged to maintain a watchful eye on course transferability and ensure articulation agreements are kept current • Given anticipated growth, particularly in the new Engineering programs, the Dean may want to prepare a request for additional sections in the next departmental Ed Plan (2020-2021) • The department is advised that the Dean will engage an External Review Panel (with the approval of the VPA) to assess and audit future self-study reports, as per the revised <i>Program Review</i> policy
Next scheduled PR (5 – 7 years):	2023


 Vice-President, Academic and Provost

Date May 23 2019