Academic Program Review of Mathematics and Statistics

University Procedures for the Review of Units and Programs call for reports and action plans to be forwarded to the Planning and Budget Committee for consideration in respect of planning and budget. PBC is also to receive a report on progress towards implementation of the action plan one year after submission.

Upon consideration of the report on Mathematics and Statistics, PBC makes the following observations. In virtue of the content of the report they are in some instances directed beyond the Department.

1. The Committee notes that all Atlantic provinces offer a similar K-12 math curriculum and that their students perform similarly on international tests. Students throughout the region are often unprepared for calculus in university. The Committee on Undergraduate Studies should explore how the other universities in the region handle these students, beginning with information collected by our Math Department.

2. It is reliably reported that significant numbers of high school students take less demanding math courses in order to improve their eligibility for university scholarships. The Committee agrees that the University should differentiate between academic and advanced math in consideration for entrance scholarship awards. The model used for the International Baccalaureate program suggests one way in which this could be done, but in any event the University must clearly signal to high schools our encouragement of the more demanding courses.

3. At Memorial, the consequences of weakness in mathematics may be exacerbated by advising students generally to take calculus "just in case" the program they choose turns out to require it. The problem would be reduced by direct admission to Faculties, Schools, or programs in year one. PBC recommends very serious consideration of direct admission on the condition that transfer from one program to another can be made in a timely way.

4. The Department of Mathematics and Statistics should work with the Faculties and Schools in order to determine the mathematics needs of various programs. If courses other than calculus best suit non-math majors, then these courses should be developed. PBC asks that consideration of this matter be reflected in the Department's one-year report.

5. 5. Reference in the documents to the need for a fundamental examination of the Department's curriculum should be actively followed up, with attention also given to modes of course delivery and measures that would enhance the quality of instruction. PBC would also welcome the Department's indication that it plans to use the results of course evaluations to this end.

6. PBC members note that the Department of French and Spanish takes all students who are interested in their subjects regardless of their level of preparation. Although this parallel is limited by the role of mathematics as an essential enabling discipline for many programs, its suggests that the recommendation to move Math 1090 to the Mathematics Learning Centre is not well rationalized.

7. Rather than discontinuing laboratory sections in mathematics, as suggested in recommendation 3.6, the efficacy of a variety of forms of assistance should be tested, including Help Centres but also Supplemental Instruction, experimental sections, small-group tutorials, computer-based tutorials, and even the private tutorial services for which so many students pay.

8. The Dean of Science should address the issue of amalgamation of courses and the sharing of teaching responsibility (as noted in recommendation 3.11) with his Department Heads.

9. The Vice-President has established a committee to review requirements for honours degrees, consistent with the recommendation (3.13) that the Department examine the number of courses required in its honours program.

10. The Committee asks the Department to work with the Faculty of Education in developing an in-service upgrading program for teachers in elementary and junior high schools (recommendation 7.2).

11. The University should seek to improve the space allocation to the Department of Mathematics and Statistics as called for in recommendation 8.1.

September 10th, 2002