Change to Program/Graduate Diploma Academic Requirements Proposal Template

The following information is required for all proposals involving a change to program/graduate diploma academic requirements, including admission requirements. To facilitate the review/approval process, please use the headings below (and omit the italicized explanations below each heading).

1. Program/Graduate Diploma: Regular M.A. program in Mathematics and Statistics

2. Effective Session of Proposed Change(s): Fall 2015

3. Proposed Change(s) and Rationale
   The description of and rationale for the proposed change(s) should provide information with respect to each of the following points. Please provide:

   a) A description of the proposed change(s) and rationale, including alignment with academic plans.

      There is a minor change where the students are required to give two talks instead of one for the M.A. by a thesis. The stated regulations in the minicalendar always required two talks and so this is just an update of calendar text to match current regulations.

      The last course in the graduate program that was 6.0 credits was MATH 6120 6.0: Modern Algebra. To appeal to a larger audience, this course is being replaced by MATH 6121 3.0: Applied Algebra and MATH 6122 3.0: Algebra II. It is therefore necessary to change the courses listed in the pure math stream in the M.A. program.

      The course MATH 6900 3.0: Operations Research I was an integrated course with MATH 4170 6.0: Operations Research and starting in Fall 2015 this course was cancelled. In its place, there were two undergraduate courses MATH 4171 3.0 and MATH 4172 3.0 proposed and one graduate course MATH 6904 3.0: Modern Optimization. The plan was to offer MATH 6904 3.0 in alternating years to MATH 4172 3.0. This makes it necessary to offer other options in the applied math stream in the M.A. program for years when it was not offered. In addition, the course MATH 6651 3.0 was already integrated with MATH 4141 3.0 so some of the students that had taken the course as an undergraduate and needed other choices for courses to take during the M.A. degree.

      The probability M.A. stream has as a requirement MATH 6620 3.0: Mathematical Statistics. There were a number of students who were interested in this stream that found that they did not have sufficient statistics background to be taking the course and were not learning the necessary statistics by taking the class. Moreover, MATH 6605 3.0: Probability Theory was not in the list of courses for the probability stream, possibly because it was not offered often enough.

      Moreover in all three of these streams we want to increase the number of courses that can be taken to complete the requirement. There is no obvious reason that the choices should be so limited and the mathematics department had been offering more courses that could be used to show that students had fulfilled the stream requirement.

      For clarification, the mathematics and statistics department has two M.A. programs: the “Masters of Arts degree - Regular Program” and a part-time “Masters of Arts degree – Program for Teachers.” We do not wish to change the names of these programs at this time.
We considered the request “They might want to state clearly that not all courses listed are offered every year.” This did not seem like a clarification of the calendar copy and request that this change not be added.

b) An outline of the changes to requirements and the associated learning outcomes, including how the proposed requirements will support the achievement of program/graduate diploma learning objectives.

The students completing the thesis requirement need to complete two talks and not one.

The list of courses for the pure mathematics, applied mathematics and probability stream are increased. MATH 6120 6.0 is replaced by MATH 6121 3.0 and MATH 6122 3.0. MATH 6900 3.0: Operations Research I is removed from the list of courses in the applied mathematics stream.

c) An overview of the consultation undertaken with relevant academic units and an assessment of the impact of the modifications on other programs/graduate diplomas. (Where and as appropriate, the proposal must include statements from the relevant program/graduate diplomas confirming consultation/support.)

The discussion about how to precisely change the M.A. streams was carried out by email with members of the sections. The proposal to change the M.A. streams was discussed at the graduate executive meeting on September 30th and then a precise text was discussed and voted on at the graduate executive meeting on October 21st. The final proposal and text was discussed and voted on by the entire department graduate faculty from October 27-31 by email.

d) A summary of any resource implications and how they are being addressed. (Attention should be paid to whether the proposed changes will be supported by a reallocation of existing resources or if new/additional resources are required. If new/additional resources are required, the proposal must include a statement from the relevant Dean(s)/Principal.)

Increasing the number of courses that students can take in order to complete this requirement will allow us to offer a greater variety of courses on rotation with more flexibility rather than the same courses every year. Otherwise, there are no obvious resource implications.

e) A summary of how students currently enrolled in the program/graduate diploma will be accommodated.

The M.A. program is generally a one year program. While there are a few students who might take longer than one year, those students will finish the program under the regulations for the 2014-15 academic year.

4. Calendar Copy

Using the following two-column format, provide a copy of the relevant program/graduate diploma requirements as they will appear in the graduate Calendar.

| Existing Program/Graduate Diploma Information (change from) | Proposed Program/Graduate Diploma Information (change to) |
### DEGREE REQUIREMENTS

**Master of Arts Degree—Regular Program**

Students in the regular program must choose one of three options.

#### MA by Coursework

Four 6000 level full courses (or equivalent), plus a seminar† (Mathematics & Statistics 6004 0.0).

#### MA by Survey Paper

Three 6000-level full courses (or equivalent), a supervised survey paper (Mathematics & Statistics 6001 0.0: students give one talk in a student Colloquium outlining the results of their papers), plus a seminar† (Mathematics & Statistics 6004 0.0).

#### MA by Thesis

Two 6000-level full courses (or equivalent), a thesis (students give one talk in a student Colloquium outlining the results of their theses), plus a seminar† (Mathematics & Statistics 6004 0.0). The thesis must be defended before an examining committee in accordance with the regulations of the Faculty of Graduate Studies.

†Students may substitute another half course for the seminar if they are pursuing their MA by Survey Paper or by Thesis. Students completing their MA by Coursework can replace the seminar requirement with another half course only if one of their four courses toward the degree is the practicum in statistical consulting (Mathematics & Statistics 6627 3.0).

Whatever option is chosen, no more than one-third of courses can be integrated, and all students must include among their courses one of the following sets:

Statistics 6602 3.0: Stochastic Processes or Mathematics & Statistics 6604 3.0: Probability Models; or


Practicum in Statistical Consulting; or
