

## Mathematics Department

### Calendar cleanup 1997

A million or so very minor changes.

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#### In the program descriptions:

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page 281, column 3: Honours mathematics, program remarks: footnote #1

**Delete:**

1. Students are required to formulate a program of study at the beginning of second year (to be updated each year). The program must be approved by an Honours adviser.

**Rationale:** This has never been implemented, and use of TELEREG has killed it.

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page 281, column 3: Honours mathematics, program remarks: footnote #3

**Delete:**

3. The following Mathematics courses are intended primarily for Honours students in Mathematics and other fields: MATH 120, 121, 220, 223, 226, 227, 300, 301, 320–323, 331, 400–403, 416–429, 440.

**Rationale:** The distinction between honours courses and others is not so strong as it used to be.

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page 282, column 2: Applied Mathematics program:

Add **MATH 345** and **MATH 405** to each of the Applied Analysis, Numerical Analysis, Operations Research options, in the appropriate years.

**Rationale:** These are very small courses not reaching their intended audience. No new sections will be created.

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#### In the course descriptions:

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page 383, column 1:

**Current:**

120 (3) Differential Calculus — Continuous functions, differentiation; graphing, mean value theorem, applications. Prerequisite(s): *Mathematics 12 and permission of the Head of the Department*. [3-0-1]

**New:**

120 (3) Differential Calculus — Continuous functions, differentiation; graphing, mean value theorem, applications. Prerequisite(s): **Principles of Mathematics 12 along with a letter of invitation from the Mathematics Department (based on performance in the Euclid Contest), or a scholarship score of at least 650 on the Provincial Principles of Mathematics 12 exam**. [3-0-1]

**Rationale:** MATH 120 is the rigorous version of calculus. We like to get the best high school students. The Province's secondary school program has split into two parts, of which Principles is the only one satisfactory for this course. The *scholarship score* is the score out of 800 used to award scholarships.

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**page 383, column 1:****Current:**

130 (6) Finite Mathematics — Intended primarily for students not in the Faculty of Science who wish to have some exposure to mathematical thinking. The course gives an introduction to probability, statistics, linear programming and game theory. Areas of application are chosen mainly from the social and biological sciences. Prerequisite(s): Mathematics 11. Students who obtain credit for MATH 101 or STAT 203 cannot in the same year or in later years obtain credit for MATH 130. [3-0-0; 3-0-0]

**New:**

130 (6) Finite Mathematics — Intended primarily for students not in the Faculty of Science who wish to have some exposure to mathematical thinking. **Applications will have a social and biological flavour**. Prerequisite(s): Mathematics 11. Students who obtain credit for MATH 101, **121, 141, 154**, or STAT 203 cannot in the same year or in later years obtain credit for MATH 130. [3-0-0; 3-0-0]

**Rationale:** Oversight. It should not affect the number of people taking the course.

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**page 383, column 2:****Delete:**

254\* (3) Vector Calculus — Space curves and vector differentiation; vector fields; path integrals; surface integrals; the divergence theorem; the theorems of Stokes and Green. Prerequisite(s): MATH 253. [3-0-0]

**Rationale:** This course has been abandoned as a requirement by the Engineering faculty. It has not been offered in '96-'97 or '97-'98.

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**page 384, column 1:**

**Delete:**

350\* (3) Complex Variables and Applications — Analytic functions. Cauchy-Riemann equations. Power series and Laurent series. Elementary functions. Contour integrals. Poles and residues. Introduction to conformal mapping. Applications of Analysis to problems in Physics and Engineering. Prerequisite(s): MATH 254, 255. Credit will not be given for MATH 350 if credit has been given for either MATH 300 or 301. [3–0–0]

**Rationale:** Replaced completely, already in the current year, by MATH 266.

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**page 385, column 1:****Current:**

552 (3) Introduction to Dynamical Systems — Ideas, methods and applications of bifurcation theory and dynamical systems: differential and difference equations, local bifurcations, perturbation methods, chaos. Prerequisite(s): MATH 315, 316.

**New:**

552 (3) Introduction to Dynamical Systems. Prerequisite(s): **one of MATH 215 or 255 together with one of MATH 257 or 316, or the single course MATH 256.**

**Rationale:** Oversight from when MATH 256 was added. This is not a very large class, and no new sections will be needed.