



**1.0 Degree Title**

Specify the two degrees for concurrent degree programs

B.Sc.

**1.1 Major (Legacy= Subject) (30-char. max.)**

Major Mathematics

**1.2 Concentration (Legacy = Concentration/Option)  
If applicable (30 char. max.)**

**1.3 Minor (with Concentration, if applicable)  
(30 char. max.)**

**1.4 Category**

- |                           |                  |
|---------------------------|------------------|
| Faculty Program (FP)      | Honours (HON)    |
| Major                     | Joint Honours    |
| Joint Major               | Component (HC)   |
| Major Concentration (CON) | Internship/Co-op |
| Minor                     | Thesis (T)       |
| Minor Concentration (CON) | Non-Thesis (N)   |
|                           | Other            |
|                           | Please specify   |

Major

**1.5 Complete Program Title**

Major Mathematics

**2.0 Administering Faculty/Unit**

Science/Mathematics and Statistics

**Offering Faculty/Department**

Mathematics and Statistics

**3.0 Effective Term of revision or retirement**

Please give reasons in 5.0 "Rationale" in the case of retirement

(Ex. Sept. 2004 = 200409) Retirement

Term: Fall 2015

**4.0 Existing Credit Weight**

54

**Proposed Credit Weight**

54

**5.0 Rationale for revised program**

Change was requested by the Faculty that its programs include advanced courses, which will provide students with the experience of dealing with more advanced material.  
Amended the complementary courses so that students must select at least six credits at the level 400 or 500 courses.

**6.0 Revised Program Description (Maximum 150 words)**

## 7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

### Required Courses (27 credits)

Note: Students who have done well in MATH 235 and MATH 242 should consider entering the Honours stream by registering in MATH 251 and MATH 255 instead of MATH 236 and MATH 243.

- \* Students may select either MATH 249 or MATH 316 but not both.
- \*\* Students who have successfully completed a course equivalent to MATH 222 with a grade of C or better may omit MATH 222, but must replace it with 3 credits of elective courses.

MATH 222 Calculus 3 (3 credits) \*\*  
MATH 235 Algebra 1 (3 credits)  
MATH 236 Algebra 2 (3 credits)  
MATH 242 Analysis 1 (3 credits)  
MATH 243 Analysis 2 (3 credits)  
MATH 249 Honours Complex Variables (3 credits) \*  
MATH 314 Advanced Calculus (3 credits)  
MATH 315 Ordinary Differential Equations (3 credits)  
MATH 316 Complex Variables (3 credits) \*  
MATH 323 Probability (3 credits)

### Complementary Courses (27 credits)

27 credits selected as follows:

21 credits selected from the following list, with at least 6 credits selected from

MATH 317 Numerical Analysis (3 credits)  
MATH 324 Statistics (3 credits)  
MATH 335 Computational Algebra (3 credits)  
MATH 340 Discrete Structures 2 (3 credits)

the remainder of the 21 credits to be selected from,

MATH 204 Principles of Statistics 2 (3 credits)  
MATH 318 Mathematical Logic (3 credits)  
MATH 319 Introduction to Partial Differential Equations (3 credits)  
MATH 320 Differential Geometry (3 credits)  
MATH 326 Nonlinear Dynamics and Chaos (3 credits)  
MATH 327 Matrix Numerical Analysis (3 credits)  
MATH 329 Theory of Interest (3 credits)  
MATH 338 History and Philosophy of Mathematics (3 credits)  
MATH 346 Number Theory (3 credits)  
MATH 348 Topics in Geometry (3 credits)  
MATH 352 Problem Seminar (1 credit)  
MATH 407 Dynamic Programming (3 credits)  
MATH 410 Majors Project (3 credits)  
MATH 417 Mathematical Programming (3 credits)  
MATH 423 Regression and Analysis of Variance (3 credits)  
MATH 427 Statistical Quality Control (3 credits)  
MATH 430 Mathematical Finance (3 credits)  
MATH 447 Introduction to Stochastic Processes (3 credits)  
MATH 523 Generalized Linear Models (4 credits)  
MATH 525 Sampling Theory and Applications (4 credits)  
MATH 545 Introduction to Time Series Analysis (4 credits)

6 additional credits in Mathematics or related disciplines selected in consultation with the Adviser.

Attach extra page(s) as needed

Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

### Required Courses (27 credits)

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MATH 236 Algebra 2 (3 credits)  
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MATH 243 Analysis 2 (3 credits)  
MATH 249 Honours Complex Variables (3 credits) \*  
MATH 314 Advanced Calculus (3 credits)  
MATH 315 Ordinary Differential Equations (3 credits)  
MATH 316 Complex Variables (3 credits) \*  
MATH 323 Probability (3 credits)

### Complementary Courses (27 credits)

27 credits selected as follows:

21 credits selected from the following list, with at least 6 credits selected from

MATH 317 Numerical Analysis (3 credits)  
MATH 324 Statistics (3 credits)  
MATH 335 Computational Algebra (3 credits)  
MATH 340 Discrete Structures 2 (3 credits)

the remainder of the 21 credits to be selected from, where at least six credits must be selected from level 400 or 500 courses.

MATH 204 Principles of Statistics 2 (3 credits)  
MATH 318 Mathematical Logic (3 credits)  
MATH 319 Introduction to Partial Differential Equations (3 credits)  
MATH 320 Differential Geometry (3 credits)  
MATH 326 Nonlinear Dynamics and Chaos (3 credits)  
MATH 327 Matrix Numerical Analysis (3 credits)  
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8.0 Consultation with  
Related Units

Yes  No

Financial Consult  Yes  No

Attach list of consultations

9. Approvals

Routing Sequence	Name	Signature	Date
Department	Voikan Jaksic.-Director-CUA	<i>Voikan Jaksic</i>	Oct. 24. 2014
Curric/Acad Committee			
Faculty 1			
Faculty 2			
Faculty 3			
SCTP			
GS			
APPC			
Senate			

Submitted by

Name   
Phone   
Email   
Submission Date

To be completed by ARR:

CIP Code