

# MATHEMATICS, B.SC. HONOURS

## Degree Requirements

### Honours (Including Co-operative Option if Selected)

Course	Title	Hours
<b>Year 1</b>		
MATH 1220	Linear Algebra 1 <sup>1</sup>	3
MATH 1230	Differential Calculus <sup>1</sup>	3
MATH 1232	Integral Calculus (B) <sup>1</sup>	3
MATH 1240	Elementary Discrete Mathematics	3
<b>Hours</b>		<b>12</b>
<b>Years 1-2</b>		
STAT 1150	Introduction to Statistics and Computing <sup>1</sup>	3
COMP 1010	Introductory Computer Science 1 <sup>1</sup>	3
The following must be completed in Year 1 or Year 2:		
6 credit hours from the Faculty of Arts, which should include the required "W" course		6
15 credit hours of electives <sup>2</sup>		15
<b>Hours</b>		<b>27</b>
<b>Year 2</b>		
MATH 2020	Algebra 1	3
MATH 2080	Introduction to Analysis	3
MATH 2090	Linear Algebra 2	3
MATH 2150	Multivariable Calculus	3
MATH 2180	Real Analysis 1	3
6 credit hours from the following list:		6
MATH 2030	Combinatorics 1	
MATH 2040	Curves and Surfaces	
MATH 2070	Graph Theory 1	
MATH 2160	Numerical Analysis 1 <sup>3</sup>	
MATH 2170	Number Theory 1	
<b>Hours</b>		<b>21</b>
<b>Years 3-4</b>		
MATH 3320	Algebra 2	3
MATH 3340	Complex Analysis 1	3
MATH 3390	Introduction to Topology	3
MATH 3440	Ordinary Differential Equations	3
MATH 3474	Real Analysis 2	3
MATH 3476	Real Analysis 3	3
One of the two concentrations listed below (see Concentration tab for course requirements)		18
Applied and Computational Mathematics		
Pure Mathematics		
12 credit hours of Mathematics courses from the following (if not already taken in 2nd year):		12
MATH 2030	Combinatorics 1	
MATH 2070	Graph Theory 1	
MATH 2160	Numerical Analysis 1	
MATH 2170	Number Theory 1	
All Year 3 and 4 Mathematics courses		

12 credit hours of electives <sup>2</sup>		12
<b>Co-op Requirements (if selected):</b>		
SCI 3980	Co-operative Education Work Term 1	0
SCI 3990	Co-operative Education Work Term 2	0
SCI 4980	Co-operative Education Work Term 3	0
SCI 4990	Co-operative Education Work Term 4 (if a 4th work term is selected)	0
<b>Hours</b>		<b>60</b>
<b>Total Hours</b>		<b>120</b>

<sup>1</sup> Students are strongly advised to take MATH 1220, MATH 1230 and MATH 1232.

The following substitutions are allowed (but not advised), provided the grades indicated in brackets are achieved:

- MATH 1210 (A) or MATH 1300 (A) in place of MATH 1220,
- MATH 1500 (A) or MATH 1510 (A) in place of MATH 1230,
- MATH 1700 (A) or MATH 1710 (A) in place of MATH 1232.

With permission from the department, students may be able to substitute STAT 1000 and STAT 2000 in place of STAT 1150.

COMP 1012 may be used in lieu of COMP 1010.

<sup>2</sup> These courses may not be used for credit in this program: MATH 1010, MATH 1018, MATH 1020, FA 1020, MATH 1080, MATH 1090.

<sup>3</sup> Department strongly recommends choosing MATH 2160 in Year 2.

(Letters in brackets indicate minimum prerequisite standing for further study.)