**Graduate Course Prerequisites**

Please read the required courses for each graduate course very carefully. If it listed as more than one number (1, 2, 3) then you need to have a requirement from each number listed. If it is listed as a letter within a number (1a, 1b), then you need one (or more as indicated) of those courses listed within the letters. Having the course prerequisites listed makes you eligible for enrolment, but it does not guarantee enrolment. If you have any questions about the prerequisites listed, please ask at math.undergrad@utoronto.ca

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<th>CODE</th>
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| MAT1061H1 S  | Partial Differential Equations II         | 1. MAT1060H: Partial Differential Equation I  
|              |                                             | 2. MAT457H1: Advanced Real Analysis I                                        |
| MAT1101H1 S  | Algebra II                                 | 1(a) MAT1100H: Algebra I  
|              |                                             | 1(b) A- in MAT347: Groups, Rings, and Fields                                |
| MAT1301H1 S  | Algebraic Topology                         | 1. MAT327H1: Intro to Topology                                              |
| MAT1601H1 S  | Mathematical Probability II                | 1. MAT1600HF: Mathematical Probability I                                    |
| MAT1850H1 S  | Linear Algebra & Optimization              | 1(a) APM462H1: Nonlinear Optimization  
|              |                                             | 1(b) MAT337/MAT357 Real Analysis AND  
|              |                                             | MAT224H1: Linear Algebra I AND  
|              |                                             | APM236H1: Applications of Linear Programming                              |
|              |                                             | 2(a) APM346H1: Partial Differential Equations                              |
|              |                                             | 2(b) MAT351Y1: Partial Differential Equations                              |
| MAT1103H1 S  | Topics in Algebra: Algebraic Geometry &   | 1. be in 400 level standing or 4th year courses  
|              | Smooth Topology                            | 2(a) A- in MAT357: Foundations of Real Analysis  
|              |                                             | 2(b) A- in MAT337: Introduction to Real Analysis  
|              |                                             | A- in MAT327: Introduction to Topology                                     |
| MAT1120H1 S  | Lie Groups & Lie Algebras I                | 1(a) MAT367H: Differential Geometry  
<p>|              |                                             | 1(b) MAT1300H: Differential Topology                                       |
| MAT1128H1 S  | Topics in Probability: Random Matter       | 1. MAT1600HF: Mathematical Probability I                                    |</p>
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| MAT1192H1 S | Topics in Algebraic Geometry: Moduli Spaces in Algebraic Geometry | 1(a) MAT1100: Algebra I  
1(b) MAT347Y1: Groups, Rings, and Fields  
1(c) MAT448H1: Introduction to Commutative Algebra and Algebraic Geometry |
| MAT1191H1 S | Topics in Algebraic Geometry: Curves and Surfaces            | 1. MAT454H: Complex Analysis II  
2. MAT1100: Algebra I AND MAT1101: Algebra II  
3. MAT1200H: Algebraic Number Theory  
4. MAT448H1: Introduction to Commutative Algebra and Algebraic Geometry |
| MAT1312H1 S | Topics in Geometry: Meromorphic connections and the Stokes phenomenon | 1. MAT267: Advanced Ordinary Differential Equations  
2. MAT354: Complex Analysis  
3(a) MAT363: Geometry of Curves and Surfaces  
3(b) MAT367: Differential Geometry |
| MAT1341H1 S | Topics in Differential Geometry                              | 1. MAT464H1: Riemannian Geometry  
2. MAT1300H: Differential Topology |
| MAT1347H1 S | Topics in Symplectic Geometry & Topology: Introduction to Contact Geometry | 1. MAT1300H: Differential Topology  
2. MAT1301H: Algebraic Topology |
| MAT1360H1 S | Complex Manifolds: Abelian Varieties & Theta Functions       | 1(a) MAT1300H: Differential Topology  
1(b) MAT367H1: Differential Geometry  
1(c) MAT448H1: Introduction to Commutative Algebra and Algebraic Geometry |
| MAT1435H1 S | Set Theory: Forcing & Its Applications                       | 1(a) MAT409H1: Set Theory  
1(b) reading course in Set Theory with Prof. Todorcevic |
| MAT1502H1 S | Topics in Geometric Analysis: Algebraic & Geometric Aspects of Kahler-Einstein Manifolds | 1(a) MAT464H1: Riemannian Geometry  
1(b) MAT367H1: Differential Geometry  
2(a) MAT454H1: Complex Analysis II  
2(b) MAT354H1: Complex Analysis I |