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| [Dror Bar-Natan](http://www.math.toronto.edu/~drorbn/): [Academic Pensieve](http://drorbn.net/AcademicPensieve/): [Projects](http://drorbn.net/AcademicPensieve/Projects/): [UChair](http://drorbn.net/AcademicPensieve/Projects/UChair/): Math Programs | (this is a private document, use at your own risk) | <http://drorbn.net/AcademicPensieve/Projects/UChair/Programs.pdf> |

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|  | Mathematical Applications in Economics and Finance Specialist (428) | Mathematics & Its Applications Specialist (Physical Science) (18) | Mathematics & Its Applications Specialist (Prob/Stats) (142) | Mathematics & Its Applications Specialist (Teaching) (16) | Applied Mathematics Specialist (“research career stream”) (62) | Mathematics and Philosophy Specialist (“research career stream”) (20) | Mathematics and Physics Specialist (“research career stream”) (80) | Mathematics Specialist (“research career stream”) (161) | Mathematics Major (1234) | Mathematics Minor (991) |
| Completion Requirements: | 12-12.5 FCE, including at least 1.5 FCE at the 400-level | 13.5-14.5 FCE, including at least 1.0 FCE at the 400 level | 11.5-13.0 FCE, including at least 1.0 FCE at the 400 level | 11.5 - 12 FCE, including at least 1.0 FCE at the 400 level | 13.0-13.5 FCE, including at least 1.5 FCE at the 400-level | Consult the UChairs of Math and Phil; 12.0 FCE including at least 1.0 FCE at the 400-level | 14.5-15.5 FCE, including at least 1.0 FCE at the 400-level | 12.5 FCE, including at least 3.0 FCE at the 400-level | 7.5 full courses or their equivalent. These must include at least 2.5 full course equivalent (FCE) at the 300+ level. Of those 2.5 FCE,at least 0.5 FCE must be at the 400 level | 4.0 FCE |
| First Year: | ECO100Y1; [MAT137Y1](https://fas.calendar.utoronto.ca/course/MAT137Y1)/​[MAT157Y1](https://fas.calendar.utoronto.ca/course/MAT157Y1), [MAT223H1](https://fas.calendar.utoronto.ca/course/MAT223H1), [MAT224H1](https://fas.calendar.utoronto.ca/course/MAT224H1) *(Ensure that you pass the first year courses with grades that allow* [*ECO206Y1*](https://fas.calendar.utoronto.ca/course/ECO206Y1)*)* | ([CSC108H1](https://fas.calendar.utoronto.ca/course/CSC108H1),[CSC148H1](https://fas.calendar.utoronto.ca/course/CSC148H1))/[CSC150H1](https://fas.calendar.utoronto.ca/course/CSC150H1); [MAT137Y1](https://fas.calendar.utoronto.ca/course/MAT137Y1)/​[MAT157Y1](https://fas.calendar.utoronto.ca/course/MAT157Y1), [MAT223H1](https://fas.calendar.utoronto.ca/course/MAT223H1)/​[MAT240H1](https://fas.calendar.utoronto.ca/course/MAT240H1) | | [CSC108H1](https://fas.calendar.utoronto.ca/course/CSC108H1); [MAT137Y1](https://fas.calendar.utoronto.ca/course/MAT137Y1)/​[MAT157Y1](https://fas.calendar.utoronto.ca/course/MAT157Y1), [MAT223H1](https://fas.calendar.utoronto.ca/course/MAT223H1)/​[MAT240H1](https://fas.calendar.utoronto.ca/course/MAT240H1) | [MAT157Y1](https://fas.calendar.utoronto.ca/course/MAT157Y1), [MAT240H1](https://fas.calendar.utoronto.ca/course/MAT240H1), [MAT247H1](https://fas.calendar.utoronto.ca/course/MAT247H1); ([CSC108H1](https://fas.calendar.utoronto.ca/course/CSC108H1),[CSC148H1](https://fas.calendar.utoronto.ca/course/CSC148H1))/[CSC150H1](https://fas.calendar.utoronto.ca/course/CSC150H1) | [MAT157Y1](https://fas.calendar.utoronto.ca/course/MAT157Y1), [MAT240H1](https://fas.calendar.utoronto.ca/course/MAT240H1), [MAT247H1](https://fas.calendar.utoronto.ca/course/MAT247H1); [PHL232H1](https://fas.calendar.utoronto.ca/course/PHL232H1) or [PHL233H1](https://fas.calendar.utoronto.ca/course/PHL233H1) | [MAT157Y1](https://fas.calendar.utoronto.ca/course/MAT157Y1), [MAT240H1](https://fas.calendar.utoronto.ca/course/MAT240H1), [MAT247H1](https://fas.calendar.utoronto.ca/course/MAT247H1); [PHY151H1](https://fas.calendar.utoronto.ca/course/PHY151H1), [PHY152H1](https://fas.calendar.utoronto.ca/course/PHY152H1) | [MAT157Y1](https://fas.calendar.utoronto.ca/course/MAT157Y1), [MAT240H1](https://fas.calendar.utoronto.ca/course/MAT240H1), [MAT247H1](https://fas.calendar.utoronto.ca/course/MAT247H1) | ([MAT135H1](https://fas.calendar.utoronto.ca/course/MAT135H1), [MAT136H1](https://fas.calendar.utoronto.ca/course/MAT136H1))/[MAT137Y1](https://fas.calendar.utoronto.ca/course/MAT137Y1)/​[MAT157Y1](https://fas.calendar.utoronto.ca/course/MAT157Y1), [MAT223H1](https://fas.calendar.utoronto.ca/course/MAT223H1)/​[MAT240H1](https://fas.calendar.utoronto.ca/course/MAT240H1) | 1. ([MAT135H1](https://fas.calendar.utoronto.ca/course/MAT135H1), [MAT136H1](https://fas.calendar.utoronto.ca/course/MAT136H1))/[MAT137Y1](https://fas.calendar.utoronto.ca/course/MAT137Y1)/​[MAT157Y1](https://fas.calendar.utoronto.ca/course/MAT157Y1) 2. [MAT221H1](https://fas.calendar.utoronto.ca/course/MAT221H1)(80%+)/ [MAT223H1](https://fas.calendar.utoronto.ca/course/MAT223H1)/​ [MAT240H1](https://fas.calendar.utoronto.ca/course/MAT240H1), [MAT235Y1](https://fas.calendar.utoronto.ca/course/MAT235Y1)/​ [MAT237Y1](https://fas.calendar.utoronto.ca/course/MAT237Y1)/​ [MAT257Y1](https://fas.calendar.utoronto.ca/course/MAT257Y1), [MAT224H1](https://fas.calendar.utoronto.ca/course/MAT224H1)/​ [MAT244H1](https://fas.calendar.utoronto.ca/course/MAT244H1)/​ [MAT246H1](https://fas.calendar.utoronto.ca/course/MAT246H1)/​ [APM236H1](https://fas.calendar.utoronto.ca/course/APM236H1)/​ [MAT247H1](https://fas.calendar.utoronto.ca/course/MAT247H1) Note: [MAT221H1](https://fas.calendar.utoronto.ca/course/MAT221H1)/​ [MAT223H1](https://fas.calendar.utoronto.ca/course/MAT223H1) should be taken in first year 3. Additional 1.0 FCE at the 300+ level from APM/MAT/ [HPS390H1](https://fas.calendar.utoronto.ca/course/HPS390H1)/​ [HPS391H1](https://fas.calendar.utoronto.ca/course/HPS391H1)/ ​[PSL432H1](https://fas.calendar.utoronto.ca/course/PSL432H1) |
| Second Year: | [ECO206Y1](https://fas.calendar.utoronto.ca/course/ECO206Y1); [MAT237Y1](https://fas.calendar.utoronto.ca/course/MAT237Y1), [MAT244H1](https://fas.calendar.utoronto.ca/course/MAT244H1), [MAT246H1](https://fas.calendar.utoronto.ca/course/MAT246H1) (waived for students taking 157Y1); [STA257H1](https://fas.calendar.utoronto.ca/course/STA257H1), [STA261H1](https://fas.calendar.utoronto.ca/course/STA261H1) | [MAT224H1](https://fas.calendar.utoronto.ca/course/MAT224H1)/​[MAT247H1](https://fas.calendar.utoronto.ca/course/MAT247H1), [MAT235Y1](https://fas.calendar.utoronto.ca/course/MAT235Y1)(“Teaching” only)/​[MAT237Y1](https://fas.calendar.utoronto.ca/course/MAT237Y1)/​[MAT257Y1](https://fas.calendar.utoronto.ca/course/MAT257Y1), [MAT246H1](https://fas.calendar.utoronto.ca/course/MAT246H1) (waived for students taking [MAT157Y1](https://fas.calendar.utoronto.ca/course/MAT157Y1)), [MAT244H1](https://fas.calendar.utoronto.ca/course/MAT244H1)/ [MAT267H1](https://fas.calendar.utoronto.ca/course/MAT267H1); [STA257H1](https://fas.calendar.utoronto.ca/course/STA257H1). [MAT237Y1](https://fas.calendar.utoronto.ca/course/MAT237Y1)/​[MAT257Y1](https://fas.calendar.utoronto.ca/course/MAT257Y1) is a direct or indirect prerequisite for many courses in each of the areas of concentration except the Teaching Concentration. Students are advised to take [MAT237Y1](https://fas.calendar.utoronto.ca/course/MAT237Y1)/​[MAT257Y1](https://fas.calendar.utoronto.ca/course/MAT257Y1) unless they have planned their course selection carefully and are certain that they will not need it. | | | [MAT257Y1](https://fas.calendar.utoronto.ca/course/MAT257Y1), [MAT267H1](https://fas.calendar.utoronto.ca/course/MAT267H1); [STA257H1](https://fas.calendar.utoronto.ca/course/STA257H1), [STA261H1](https://fas.calendar.utoronto.ca/course/STA261H1) |  | [MAT257Y1](https://fas.calendar.utoronto.ca/course/MAT257Y1), [MAT267H1](https://fas.calendar.utoronto.ca/course/MAT267H1); [PHY224H1](https://fas.calendar.utoronto.ca/course/PHY224H1), [PHY250H1](https://fas.calendar.utoronto.ca/course/PHY250H1), [PHY252H1](https://fas.calendar.utoronto.ca/course/PHY252H1), [PHY254H1](https://fas.calendar.utoronto.ca/course/PHY254H1), [PHY256H1](https://fas.calendar.utoronto.ca/course/PHY256H1) | [MAT257Y1](https://fas.calendar.utoronto.ca/course/MAT257Y1), [MAT267H1](https://fas.calendar.utoronto.ca/course/MAT267H1) | [MAT224H1](https://fas.calendar.utoronto.ca/course/MAT224H1)/​ [MAT247H1](https://fas.calendar.utoronto.ca/course/MAT247H1), [MAT235Y1](https://fas.calendar.utoronto.ca/course/MAT235Y1)/​ [MAT237Y1](https://fas.calendar.utoronto.ca/course/MAT237Y1)/​[MAT257Y1](https://fas.calendar.utoronto.ca/course/MAT257Y1), [MAT244H1](https://fas.calendar.utoronto.ca/course/MAT244H1), [MAT246H1](https://fas.calendar.utoronto.ca/course/MAT246H1)  NOTE: MAT224H1 may be taken in first year |
| Second and Higher Years: | **Note A:** At least 0.5 FCE with a significant emphasis on ethics and social responsibility: [ENV333H1](https://fas.calendar.utoronto.ca/course/ENV333H1)/ ​[ETH201H1](https://fas.calendar.utoronto.ca/course/ETH201H1)/ ​[ETH210H1](https://fas.calendar.utoronto.ca/course/ETH210H1)/​ [ETH220H1](https://fas.calendar.utoronto.ca/course/ETH220H1)/​ [HPS200H1](https://fas.calendar.utoronto.ca/course/HPS200H1)/​ [IMC200H1](https://fas.calendar.utoronto.ca/course/IMC200H1)/ ​[JPH441H1](https://fas.calendar.utoronto.ca/course/JPH441H1)/ ​[PHL265H1](https://fas.calendar.utoronto.ca/course/PHL265H1)/​ [PHL273H1](https://fas.calendar.utoronto.ca/course/PHL273H1)/​ [PHL275H1](https://fas.calendar.utoronto.ca/course/PHL275H1)/​ [PHL281H1](https://fas.calendar.utoronto.ca/course/PHL281H1) or another H course approved by the Department. Note: Students may use the CR/NCR option with this H course and have it count toward the Mathematics Specialist program. Students in the VIC program may also use [VIC172Y1](https://fas.calendar.utoronto.ca/course/VIC172Y1). | | | | Note A. | 1. [MAT257Y1](https://fas.calendar.utoronto.ca/course/MAT257Y1), [MAT327H1](https://fas.calendar.utoronto.ca/course/MAT327H1), [MAT347Y1](https://fas.calendar.utoronto.ca/course/MAT347Y1), [MAT354H1](https://fas.calendar.utoronto.ca/course/MAT354H1)/​[MAT357H1](https://fas.calendar.utoronto.ca/course/MAT357H1) 2. [PHL345H1](https://fas.calendar.utoronto.ca/course/PHL345H1), [MAT309H1](https://fas.calendar.utoronto.ca/course/MAT309H1)/​[PHL348H1](https://fas.calendar.utoronto.ca/course/PHL348H1) 3. Four of: [PHL325H1](https://fas.calendar.utoronto.ca/course/PHL325H1), [PHL331H1](https://fas.calendar.utoronto.ca/course/PHL331H1), [PHL332H1](https://fas.calendar.utoronto.ca/course/PHL332H1), [PHL346H1](https://fas.calendar.utoronto.ca/course/PHL346H1), [PHL347H1](https://fas.calendar.utoronto.ca/course/PHL347H1), [PHL349H1](https://fas.calendar.utoronto.ca/course/PHL349H1), [PHL355H1](https://fas.calendar.utoronto.ca/course/PHL355H1), [PHL451H1](https://fas.calendar.utoronto.ca/course/PHL451H1), [PHL480H1](https://fas.calendar.utoronto.ca/course/PHL480H1) 4. 1.0 FCE from [PHL200Y1](https://fas.calendar.utoronto.ca/course/PHL200Y1)/ ​[PHL205H1](https://fas.calendar.utoronto.ca/course/PHL205H1" \t "_blank)/​ [PHL206H1](https://fas.calendar.utoronto.ca/course/PHL206H1)/ [PHL210Y1](https://fas.calendar.utoronto.ca/course/PHL210Y1) 5. [PHL265H1](https://fas.calendar.utoronto.ca/course/PHL265H1)/​ [PHL275H1](https://fas.calendar.utoronto.ca/course/PHL275H1" \t "_blank) 6. Additional 2.0 FCE from PHL or MAT to a total of 12.0 FCE | 1. Note A. 2. [PHY252H1](https://fas.calendar.utoronto.ca/course/PHY252H1) and [PHY324H1](https://fas.calendar.utoronto.ca/course/PHY324H1) may be taken in the 2nd or 3rd year. | 1. Note A.  2. [MAT327H1](https://fas.calendar.utoronto.ca/course/MAT327H1) | At least 0.5 FCE with a significant emphasis on ethics and social responsibility: [ETH210H1](https://fas.calendar.utoronto.ca/course/ETH210H1)/​ [ETH220H1](https://fas.calendar.utoronto.ca/course/ETH220H1)/ ​[HPS200H1](https://fas.calendar.utoronto.ca/course/HPS200H1)/​ [JPH441H1](https://fas.calendar.utoronto.ca/course/JPH441H1)/​ [PHL265H1](https://fas.calendar.utoronto.ca/course/PHL265H1)/​ [PHL273H1](https://fas.calendar.utoronto.ca/course/PHL273H1)/​ [PHL275H1](https://fas.calendar.utoronto.ca/course/PHL275H1)/​ [PHL281H1](https://fas.calendar.utoronto.ca/course/PHL281H1) or another H course approved by the Department. Note: Students may use the CR/NCR option with this H course and have it count toward the program. |
| Third and Fourth Years: | Third Year: 1. [APM346H1](https://fas.calendar.utoronto.ca/course/APM346H1); [ECO358H1](https://fas.calendar.utoronto.ca/course/ECO358H1); [ECO359H1](https://fas.calendar.utoronto.ca/course/ECO359H1); [MAT337H1](https://fas.calendar.utoronto.ca/course/MAT337H1); [STA302H1](https://fas.calendar.utoronto.ca/course/STA302H1)/​[ECO375H1](https://fas.calendar.utoronto.ca/course/ECO375H1); [STA347H1](https://fas.calendar.utoronto.ca/course/STA347H1) 2. One of: [MAT332H1](https://fas.calendar.utoronto.ca/course/MAT332H1), [MAT344H1](https://fas.calendar.utoronto.ca/course/MAT344H1), [MAT334H1](https://fas.calendar.utoronto.ca/course/MAT334H1), [MAT475H1](https://fas.calendar.utoronto.ca/course/MAT475H1) Fourth Year: [APM462H1](https://fas.calendar.utoronto.ca/course/APM462H1), [APM466H1](https://fas.calendar.utoronto.ca/course/APM466H1); [STA457H1](https://fas.calendar.utoronto.ca/course/STA457H1) | [MAT301H1](https://fas.calendar.utoronto.ca/course/MAT301H1), [MAT334H1](https://fas.calendar.utoronto.ca/course/MAT334H1) | | | 1. [MAT351Y1](https://fas.calendar.utoronto.ca/course/MAT351Y1); [MAT327H1](https://fas.calendar.utoronto.ca/course/MAT327H1), [MAT347Y1](https://fas.calendar.utoronto.ca/course/MAT347Y1), [MAT354H1](https://fas.calendar.utoronto.ca/course/MAT354H1), [MAT357H1](https://fas.calendar.utoronto.ca/course/MAT357H1), [MAT363H1](https://fas.calendar.utoronto.ca/course/MAT363H1)/​[MAT367H1](https://fas.calendar.utoronto.ca/course/MAT367H1) ([MAT363H1](https://fas.calendar.utoronto.ca/course/MAT363H1) can be taken in the second year, if desired); [STA347H1](https://fas.calendar.utoronto.ca/course/STA347H1) 2. At least 1.5 FCE from: [MAT332H1](https://fas.calendar.utoronto.ca/course/MAT332H1), [MAT344H1](https://fas.calendar.utoronto.ca/course/MAT344H1), [MAT454H1](https://fas.calendar.utoronto.ca/course/MAT454H1), [MAT457H1](https://fas.calendar.utoronto.ca/course/MAT457H1), [MAT458H1](https://fas.calendar.utoronto.ca/course/MAT458H1), [MAT464H1](https://fas.calendar.utoronto.ca/course/MAT464H1); [STA302H1](https://fas.calendar.utoronto.ca/course/STA302H1), [STA457H1](https://fas.calendar.utoronto.ca/course/STA457H1); [CSC336H1](https://fas.calendar.utoronto.ca/course/CSC336H1), [CSC436H1](https://fas.calendar.utoronto.ca/course/CSC436H1), [CSC446H1](https://fas.calendar.utoronto.ca/course/CSC446H1), [CSC456H1](https://fas.calendar.utoronto.ca/course/CSC456H1) 3. 1.0 FCE from: [APM421H1](https://fas.calendar.utoronto.ca/course/APM421H1), [APM426H1](https://fas.calendar.utoronto.ca/course/APM426H1), [APM441H1](https://fas.calendar.utoronto.ca/course/APM441H1), [APM446H1](https://fas.calendar.utoronto.ca/course/APM446H1), [APM461H1](https://fas.calendar.utoronto.ca/course/APM461H1), [APM462H1](https://fas.calendar.utoronto.ca/course/APM462H1), [APM466H1](https://fas.calendar.utoronto.ca/course/APM466H1) 4. [MAT477H1](https://fas.calendar.utoronto.ca/course/MAT477H1) |  | Third Year: 1. [MAT351Y1](https://fas.calendar.utoronto.ca/course/MAT351Y1); [MAT334H1](https://fas.calendar.utoronto.ca/course/MAT334H1)/​[MAT354H1](https://fas.calendar.utoronto.ca/course/MAT354H1), [MAT357H1](https://fas.calendar.utoronto.ca/course/MAT357H1) 2. One of: [MAT327H1](https://fas.calendar.utoronto.ca/course/MAT327H1), [MAT347Y1](https://fas.calendar.utoronto.ca/course/MAT347Y1), [MAT363H1](https://fas.calendar.utoronto.ca/course/MAT363H1)/​[MAT367H1](https://fas.calendar.utoronto.ca/course/MAT367H1) ([MAT363H1](https://fas.calendar.utoronto.ca/course/MAT363H1) can be taken in the second year, if desired) 3. [PHY324H1](https://fas.calendar.utoronto.ca/course/PHY324H1), [PHY350H1](https://fas.calendar.utoronto.ca/course/PHY350H1), [PHY354H1](https://fas.calendar.utoronto.ca/course/PHY354H1), [PHY356H1](https://fas.calendar.utoronto.ca/course/PHY356H1) Fourth Year: 1. Two of: [APM421H1](https://fas.calendar.utoronto.ca/course/APM421H1), [APM426H1](https://fas.calendar.utoronto.ca/course/APM426H1), [APM446H1](https://fas.calendar.utoronto.ca/course/APM446H1), [APM441H1](https://fas.calendar.utoronto.ca/course/APM441H1) 2. Two of: [PHY450H1](https://fas.calendar.utoronto.ca/course/PHY450H1), [PHY452H1](https://fas.calendar.utoronto.ca/course/PHY452H1), [PHY454H1](https://fas.calendar.utoronto.ca/course/PHY454H1), [PHY456H1](https://fas.calendar.utoronto.ca/course/PHY456H1), [PHY460H1](https://fas.calendar.utoronto.ca/course/PHY460H1) 3. One of: [MAT477H1](https://fas.calendar.utoronto.ca/course/MAT477H1); [PHY424H1](https://fas.calendar.utoronto.ca/course/PHY424H1), [PHY478H1](https://fas.calendar.utoronto.ca/course/PHY478H1), [PHY479Y1](https://fas.calendar.utoronto.ca/course/PHY479Y1)  1. Students who are intending to apply to graduate schools in mathematics would be well-advised to take [MAT347Y1](https://fas.calendar.utoronto.ca/course/MAT347Y1).  2. Note B.  3. Note C. | 1. [MAT347Y1](https://fas.calendar.utoronto.ca/course/MAT347Y1), [MAT354H1](https://fas.calendar.utoronto.ca/course/MAT354H1), [MAT357H1](https://fas.calendar.utoronto.ca/course/MAT357H1), [MAT363H1](https://fas.calendar.utoronto.ca/course/MAT363H1)/​[MAT367H1](https://fas.calendar.utoronto.ca/course/MAT367H1) ([MAT363H1](https://fas.calendar.utoronto.ca/course/MAT363H1) can be taken in the second year, if desired) 2. 2.0 FCE of: [MAT309H1](https://fas.calendar.utoronto.ca/course/MAT309H1), [MAT351Y1](https://fas.calendar.utoronto.ca/course/MAT351Y1), ANY 400-level APM/MAT 3. 3.0 FCE of APM/MAT at the 300+ level, including at least 2.0 FCE at the 400 level (these may include options above not already chosen) 4. [MAT477H1](https://fas.calendar.utoronto.ca/course/MAT477H1) | 1. [MAT301H1](https://fas.calendar.utoronto.ca/course/MAT301H1), [MAT309H1](https://fas.calendar.utoronto.ca/course/MAT309H1)/​[MAT315H1](https://fas.calendar.utoronto.ca/course/MAT315H1), [MAT334H1](https://fas.calendar.utoronto.ca/course/MAT334H1) 2. Additional 0.5 FCE at the 200+ level from: [ACT240H1](https://fas.calendar.utoronto.ca/course/ACT240H1)/​[ACT230H1](https://fas.calendar.utoronto.ca/course/ACT230H1); [APM236H1](https://fas.calendar.utoronto.ca/course/APM236H1); [MAT309H1](https://fas.calendar.utoronto.ca/course/MAT309H1)/​[MAT315H1](https://fas.calendar.utoronto.ca/course/MAT315H1)/​[MAT335H1](https://fas.calendar.utoronto.ca/course/MAT335H1)/​ [MAT337H1](https://fas.calendar.utoronto.ca/course/MAT337H1); [STA247H1](https://fas.calendar.utoronto.ca/course/STA247H1)/​[STA257H1](https://fas.calendar.utoronto.ca/course/STA257H1) 3. Additional 0.5 FCE at the 300+level from: [APM346H1](https://fas.calendar.utoronto.ca/course/APM346H1), [APM462H1](https://fas.calendar.utoronto.ca/course/APM462H1); [MAT309H1](https://fas.calendar.utoronto.ca/course/MAT309H1), [MAT315H1](https://fas.calendar.utoronto.ca/course/MAT315H1), [MAT332H1](https://fas.calendar.utoronto.ca/course/MAT332H1)/​[MAT344H1](https://fas.calendar.utoronto.ca/course/MAT344H1), [MAT335H1](https://fas.calendar.utoronto.ca/course/MAT335H1), [MAT337H1](https://fas.calendar.utoronto.ca/course/MAT337H1), [MAT363H1](https://fas.calendar.utoronto.ca/course/MAT363H1), [MAT475H1](https://fas.calendar.utoronto.ca/course/MAT475H1); [HPS390H1](https://fas.calendar.utoronto.ca/course/HPS390H1), [HPS391H1](https://fas.calendar.utoronto.ca/course/HPS391H1); [PSL432H1](https://fas.calendar.utoronto.ca/course/PSL432H1) 4. [MAT401H1](https://fas.calendar.utoronto.ca/course/MAT401H1)/​[MAT402H1](https://fas.calendar.utoronto.ca/course/MAT402H1) or any other MAT/APM 400-level course |
| NOTES: | **Note B:** Students planning to take specific fourth year courses should ensure that they have the necessary second and third year prerequisites. | Note B.  Physical Sciences Concentration:  1. [PHY151H1](https://fas.calendar.utoronto.ca/course/PHY151H1), [PHY152H1](https://fas.calendar.utoronto.ca/course/PHY152H1); [AST221H1](https://fas.calendar.utoronto.ca/course/AST221H1) 2. Three of: [AST222H1](https://fas.calendar.utoronto.ca/course/AST222H1); [PHY250H1](https://fas.calendar.utoronto.ca/course/PHY250H1), [PHY252H1](https://fas.calendar.utoronto.ca/course/PHY252H1), [PHY254H1](https://fas.calendar.utoronto.ca/course/PHY254H1), [PHY256H1](https://fas.calendar.utoronto.ca/course/PHY256H1) 3. [APM346H1](https://fas.calendar.utoronto.ca/course/APM346H1)/​[MAT351Y1](https://fas.calendar.utoronto.ca/course/MAT351Y1) 4. Three of: [AST320H1](https://fas.calendar.utoronto.ca/course/AST320H1), [AST325H1](https://fas.calendar.utoronto.ca/course/AST325H1); [MAT337H1](https://fas.calendar.utoronto.ca/course/MAT337H1), [MAT363H1](https://fas.calendar.utoronto.ca/course/MAT363H1)/​[MAT367H1](https://fas.calendar.utoronto.ca/course/MAT367H1); [PHY350H1](https://fas.calendar.utoronto.ca/course/PHY350H1), [PHY354H1](https://fas.calendar.utoronto.ca/course/PHY354H1), [PHY356H1](https://fas.calendar.utoronto.ca/course/PHY356H1), [PHY357H1](https://fas.calendar.utoronto.ca/course/PHY357H1), [PHY358H1](https://fas.calendar.utoronto.ca/course/PHY358H1) 5. Two of: [APM421H1](https://fas.calendar.utoronto.ca/course/APM421H1), [APM426H1](https://fas.calendar.utoronto.ca/course/APM426H1), [APM441H1](https://fas.calendar.utoronto.ca/course/APM441H1), [APM446H1](https://fas.calendar.utoronto.ca/course/APM446H1); [PHY407H1](https://fas.calendar.utoronto.ca/course/PHY407H1), [PHY408H1](https://fas.calendar.utoronto.ca/course/PHY408H1), [PHY456H1](https://fas.calendar.utoronto.ca/course/PHY456H1) | Note B.  Probability/Statistics Concentration:  1. [APM346H1](https://fas.calendar.utoronto.ca/course/APM346H1)/​[MAT351Y1](https://fas.calendar.utoronto.ca/course/MAT351Y1)/​[APM462H1](https://fas.calendar.utoronto.ca/course/APM462H1); [MAT337H1](https://fas.calendar.utoronto.ca/course/MAT337H1); [STA261H1](https://fas.calendar.utoronto.ca/course/STA261H1), [STA302H1](https://fas.calendar.utoronto.ca/course/STA302H1), [STA347H1](https://fas.calendar.utoronto.ca/course/STA347H1), [STA352Y1](https://fas.calendar.utoronto.ca/course/STA352Y1)/​([STA452H1](https://fas.calendar.utoronto.ca/course/STA452H1), [STA453H1](https://fas.calendar.utoronto.ca/course/STA453H1)) 2. Additional 1.0 FCE at the 300+level from APM/MAT/STA 3. Two of: [STA437H1](https://fas.calendar.utoronto.ca/course/STA437H1), [STA442H1](https://fas.calendar.utoronto.ca/course/STA442H1), [STA447H1](https://fas.calendar.utoronto.ca/course/STA447H1), [STA457H1](https://fas.calendar.utoronto.ca/course/STA457H1) | Note B.  Teaching Concentration:  For course selection, note that OISE requires students to have a second teachable subject. 1. [MAT329Y1](https://fas.calendar.utoronto.ca/course/MAT329Y1), HPS/[MAT390H1](https://fas.calendar.utoronto.ca/course/MAT390H1), HPS/[MAT391H1](https://fas.calendar.utoronto.ca/course/MAT391H1) 2. Two of:[MAT332H1](https://fas.calendar.utoronto.ca/course/MAT332H1)/​[MAT344H1](https://fas.calendar.utoronto.ca/course/MAT344H1), [MAT335H1](https://fas.calendar.utoronto.ca/course/MAT335H1), [MAT337H1](https://fas.calendar.utoronto.ca/course/MAT337H1), [MAT363H1](https://fas.calendar.utoronto.ca/course/MAT363H1)/​[MAT367H1](https://fas.calendar.utoronto.ca/course/MAT367H1) 3. Two of: [MAT309H1](https://fas.calendar.utoronto.ca/course/MAT309H1), [MAT315H1](https://fas.calendar.utoronto.ca/course/MAT315H1); [STA302H1](https://fas.calendar.utoronto.ca/course/STA302H1)/​[STA347H1](https://fas.calendar.utoronto.ca/course/STA347H1) 4. [MAT401H1](https://fas.calendar.utoronto.ca/course/MAT401H1)/​[MAT402H1](https://fas.calendar.utoronto.ca/course/MAT402H1) and 0.5 FCE at the 400-level from MAT, APM, STA | 1. The Department recommends that [PHY151H1](https://fas.calendar.utoronto.ca/course/PHY151H1) and [PHY152H1](https://fas.calendar.utoronto.ca/course/PHY152H1) be taken in the First Year, and that [CSC148H1](https://fas.calendar.utoronto.ca/course/CSC148H1) and [STA257H1](https://fas.calendar.utoronto.ca/course/STA257H1) be taken during the program. If you do not have a year-long course in programming from high school, the Department strongly recommends that you take [CSC108H1](https://fas.calendar.utoronto.ca/course/CSC108H1) prior to [CSC148H1](https://fas.calendar.utoronto.ca/course/CSC148H1).  2. Note B.  3. Note C. | **Note C:** Students with a CGPA of 3.5 and above may apply to have graduate level math courses count towards their 400-level course requirements. | 1. The dep. recommends that [PHY151H1](https://fas.calendar.utoronto.ca/course/PHY151H1) and [PHY152H1](https://fas.calendar.utoronto.ca/course/PHY152H1) be taken in the First Year, and that [CSC148H1](https://fas.calendar.utoronto.ca/course/CSC148H1) and [STA257H1](https://fas.calendar.utoronto.ca/course/STA257H1) be taken during the program. If you do not have a year-long course in programming from high school, the dep. strongly recommends that you take [CSC108H1](https://fas.calendar.utoronto.ca/course/CSC108H1) prior to [CSC148H1](https://fas.calendar.utoronto.ca/course/CSC148H1).  2. Note B.  3. Note C. | 1. Students using [MAT157Y1](https://fas.calendar.utoronto.ca/course/MAT157Y1) towards the first year program requirements must replace the exclusion course [MAT246H1](https://fas.calendar.utoronto.ca/course/MAT246H1) with a different H level MAT/APM course at the 200+ level.  2. Note D. With a judicious choice of courses, usually including introductory computer science, students can fulfill the requirements for a double major in mathematics and one of several other disciplines.  3. Note B.  4. Students interested in becoming K-12 teachers should consider applying to the combined degree program - a six-year program that leads to an Honours Bachelor of Science (H B Sc) from the University of Toronto and a Master of Teaching (M T) from the Ontario Institute for Studies in Education (OISE). The HBSc part of this program involves completing a Math Major, a Minor in Education and Society (offered by Victoria College) and a Minor in an area that would lead to a second "teachable" subject. See the Victoria College website for more information. | 1. **Note D:** higher level courses within the same topic are acceptable substitutions. 2. Note B. |