B.Sc. & B.Sc. (Hons) with Major in Applied Mathematics (without specialization, but with interest in Scientific Computing)

Sample Study Plan for Students Admitted in AY2019/2020 or after

Occasionally certain modules listed below may not be offered in a particular year.

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>RECOMMENDED MODULES</th>
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</table>
| 1000  | • MA1100 Basic Discrete Mathematics  
• MA1101R Linear Algebra I  
• MA1102R Calculus  
• CS1010/CS1010E/CS1010S/CS1010X/CS1101S Programming Methodology |
| 2000  | • MA2101/MA2101S Linear Algebra II  
• MA2104 Multivariable Calculus  
• MA2108/MA2108S Mathematical Analysis I  
• MA2213 Numerical Analysis I  
• MA2216/ST2131 Probability  
• MA2214 Combinatorics and Graphs I |
| 3000  | • MA3220 Ordinary Differential Equations  
• MA3227 Numerical Analysis II  
• MA3210 Mathematical Analysis II  
• Two* of the following modules:  
  – MA3211 Complex Analysis I  
  – MA3236 Nonlinear Programming  
  – MA3252 Linear and Network Optimization ¹  
  – MA3259 Mathematical Methods in Genomics  
  – MA3264 Mathematical Modelling |

*One may need to take additional Level 3000 modules as unrestrictive elective modules to serve as prerequisites for certain Level 4000 modules.
<table>
<thead>
<tr>
<th>LEVEL</th>
<th>RECOMMENDED MODULES</th>
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</table>
| 4000  | • MA4199 Honours Project in Mathematics  
       | • MA4229 Fourier Analysis and Approximation  
       | • MA4230 Matrix Computation  
       | • MA4255 Numerical Methods in Differential Equations  
       | • MA4270 Data Modelling and Computation  
       | • One of the following modules:  
       |   – MA4221 Partial Differential Equations  
       |   – MA4254 Discrete Optimization  
       |       |   – MA4268 Mathematics for Visual Data Processing  
       |       |   – CS4232 Theory of Computation or CS4234 Optimisation Algorithms |

**Notes:**
1. MA4254 requires MA3252 as prerequisite
2. CS4234 requires CS3230 as prerequisite

*Updated 02 July 2019*