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 AY2014/15 or AY2015/16

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 Fundamental Concepts of Mathematics  
          • MA1101R Linear Algebra I  
          • MA1102R Calculus  
          • MA1104 Multivariable Calculus  
          • CS1010/CS1010E/CS1010S/CS1010FC/CS1010X Programming Methodology |
| 2000  | • MA2101/MA2101S Linear Algebra II  
          • MA2108/MA2108S Mathematical Analysis I  
          • MA2213 Numerical Analysis I  
          • MA2216/ST2131 Probability  
          • One of the following modules:  
              – MA2202/MA2202S Algebra I or MA3218 Applied Algebra  
              – MA2214 Combinatorics and Graphs I  
              – ST2132 Mathematical Statistics |
| 3000  | • MA3110/MA3110S Mathematical Analysis II  
          • MA3111/MA3111S Complex Analysis I  
          • MA3220 Ordinary Differential Equations  
          • MA3227 Numerical Analysis II  
          • Two of the following modules:  
              – MA3209 Mathematical Analysis III  
              – MA3236 Nonlinear Programming  
              – MA3252 Linear and Network Optimization  
              – MA3264 Mathematical Modelling |

**Note:**
One may need to take additional Level 3000 modules as unrestricted elective modules to serve as prerequisites for certain Level 4000 modules
## RECOMMENDED MODULES

<table>
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<tr>
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| 4000  | • MA4199 Honours Project in Mathematics  
        • MA4221 Partial Differential Equations  
        • MA4230 Matrix Computation  
        • MA4255 Numerical Methods in Differential Equations  
        • Three of the following modules:  
          – MA4211 Functional Analysis\(^1\)  
          – MA4254 Discrete Optimization\(^2\)  
          – MA4264 Game Theory\(^3\)  
          – MA4268 Mathematics for Visual Data Processing  
          – MA4270 Data Modelling and Computation\(^4\) |

\(^1\) MA4211 requires MA3209 as prerequisite  
\(^2\) MA4254 requires MA3252 as prerequisite  
\(^3\) MA4264 requires MA3236 or MA3252 as prerequisite  
\(^4\) MA4270 requires ST3131 as prerequisite

*Updated 19 Nov 2016*