B.Sc. & B.Sc. (Hons) with Major in Applied Mathematics with interest in Operations Research

Sample Study Plan for Students Admitted in AY2007/08 to AY2013/14

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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| 1000  | • MA1100 Fundamental Concepts of Mathematics  
• MA1101R Linear Algebra I  
• MA1102R Calculus  
• MA1104 Multivariable Calculus  
• For students matriculated before AY2010/11: - CZ1102 Problem Solving and Computation or CS1101/CS1101C/CS1101S Programming Methodology  
For students matriculated from AY2010/11 to AY2013/14: - CS1010/CS1010E/CS1010S Programming Methodology or IT1006 MATLAB Programming for Mathematics |
| 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 Combinatorial Analysis (new title from AY2013/14: Combinatorics and Graphs I)  
- ST2132 Mathematical Statistics |
| 3000  | • MA3110/MA3110S Mathematical Analysis II  
• MA3111/MA3111S Complex Analysis I  
• MA3233 Algorithmic Graph Theory (new title from AY2013/14: Combinatorics and Graphs II)\(^1\)  
• MA3236 Nonlinear Programming  
• MA3252 Linear and Network Optimization  
• One of the following modules: - MA3220 Ordinary Differential Equations  
- MA3227 Numerical Analysis II  
- MA3238/ST3236 Stochastic Processes I |
### LEVEL 3000

- MA3264 Mathematical Modelling

*Note: One may need to take additional Level 3000 modules as unrestrictive elective modules to serve as prerequisites for certain Level 4000 modules*

### LEVEL 4000

- MA4199 Honours Project in Mathematics
- MA4230 Matrix Computation
- MA4235 Graph Theory (*new title from AY2014/15: Topics in Graph Theory*)
- MA4254 Discrete Optimization
- MA4264 Game Theory
- Two of the following modules:
  - MA4221 Partial Differential Equations\(^2\)
  - MA4268 Mathematics for Visual Data Processing

\(^1\) MA3233 requires MA2214 as prerequisite
\(^2\) MA4221 requires MA3220 as prerequisite
\(^3\) MA4255 requires MA3220 as prerequisite

*Updated 22 Jul 2014*