B.Sc. & B.Sc. (Hons) with Major in Applied Mathematics with Specialization in Operations Research and Financial Mathematics (ORFM)

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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| 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  
       | - One of the following modules:  
       |   - MA2214 Combinatorics and Graph I  
       |   - ST2132 Mathematical Statistics |
| 3000  | - MA3236 Nonlinear Programming  
       | - MA3252 Linear and Network Optimization  
       | - MA3269 Mathematical Finance I  
       | - Two* of the following modules:  
       |   - MA3210 Mathematical Analysis II  
       |   - MA3220 Ordinary Differential Equations  
       |   - MA3233 Combinatorics and Graph II  
       |   - MA3238 Stochastic Process I  
       |   - ST3131 Regression Analysis  
       | - Optional unrestrictive elective module:  
       |   - QF3101 Investment Instruments: Theory and Computation |

*One may need to take additional Level 3000 modules as unrestrictive elective modules to serve as prerequisites for certain Level 4000 modules.
LEVEL | RECOMMENDED MODULES
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4000 | • MA4199 Honours Project in Mathematics  
• MA4254 Discrete Optimization  
• MA4260 Stochastic Operations Research  
• MA4264 Game Theory  
• MA4269 Mathematical Finance II  
• One* of the following modules:  
  – MA4230 Matrix Computation  
  – MA4235 Topics in Graph Theory  
  – MA4255 Numerical Methods in Differential Equations  
  – ST4245 Statistical Methods for Finance

Notes:
1 MA3233 requires MA2214 as prerequisite  
2 MA4255 requires MA3220 as prerequisite  
3 MA4235 requires MA3233 as prerequisite  
4 ST4245 requires ST3131 as prerequisite

* One module from the following modules:
  – MA4230 Matrix Computation  
  – MA4235 Topics in Graph Theory  
  – MA4255 Numerical Methods in Differential Equations  
  – ST4245 Statistical Methods for Finance

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