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

Graduation Requirements for students admitted in AY2013/14

To be awarded a **B.Sc. or B.Sc.(Hons) with primary major in Applied Mathematics**, in addition to the University and Faculty requirements, a candidate must satisfy the following:

Module Level	Major Requirements	Level MCs	Cumulative Major MCs
1000	1. Pass the 4 modules in List I 2. Pass CS1010/CS1010E/CS1010S Programming Methodology	20	20
2000	3. Pass all the following modules: • MA2101/MA2101S Linear Algebra II • MA2108/MA2108S Mathematical Analysis I • MA2213 Numerical Analysis I • MA2216/ST2131 Probability 4. Pass one additional module from List II, III, IV	20-23	40-43
3000	5. Pass all the following modules: • MA3110/MA3110S Mathematical Analysis II • MA3111/MA3111S Complex Analysis I 6. Pass two modules from List AM3 7. Pass two additional modules from List III, IV	24-27*	64-70*
4000	8. Pass MA4199 Honours Project in Mathematics 9. Pass four modules from List AM4 10. Pass two additional modules from List IV	36-37*	100-106*
UROPS	At most one Mathematics UROPS module may be used to fulfil the requirements of Major in Applied Mathematics		

List I
• MA1100 Fundamental Concepts of Mathematics or CS1231 Discrete Structures
• MA1101R Linear Algebra I
• MA1102R Calculus
• MA1104 Multivariable Calculus

List II

- All MA modules at level 2000, except those coded MA23XX
- PC2130 Quantum Mechanics I
- PC2132 Classical Mechanics
- ST2132 Mathematical Statistics

List III

- All MA modules at level 3000, except MA3311 and MA3312
- CS3230 Design & Analysis of Algorithms
- CS3234 Logic and Formal Systems
- CS4232 Theory of Computation
- EC3101 Microeconomic Analysis II
- EC3303 Econometrics I
- PC3130 Quantum Mechanics II
- PC3236 Computational Methods in Physics
- PC3238 Fluid Dynamics
- ST3131 Regression Analysis
- ST3236 Stochastic Processes I

List IV

- All MA modules at level 4000 or higher
- CS4236 Cryptography Theory and Practice
- CS5230 Computational Complexity
- CS5237 Computational Geometry and Applications
- EC4101/EC4301* Microeconomics Analysis III
- EC5104 Mathematical Economics
- PC4248 Relativity
- PC4274 Mathematical Methods in Physics III
- ST4238 Stochastic Processes II

List AM3

- MA3209 Mathematical Analysis III
- MA3220 Ordinary Differential Equations
- MA3227 Numerical Analysis II
- MA3233 Combinatorics and Graph II
- MA3236 Nonlinear Programming
- MA3252 Linear and Network Optimization
- MA3264 Mathematical Modelling
- MA3269 Mathematical Finance I

List AM4

- MA4211 Functional Analysis
- MA4221 Partial Differential Equations
- MA4230 Matrix Computation
- MA4235 Topics in Graph Theory
- MA4254 Discrete Optimization
- MA4255 Numerical Methods in Differential Equations
- MA4268 Mathematics for Visual Data Processing
- MA4269 Mathematical Finance II

Modular Credit Cumulative Table

Requirements	B.Sc.	B.Sc. (Hons)
University Requirements	20 MC	20 MC
Faculty Requirements	4-8** MC	4-12** MC
Major Requirements	64-70* MC	100-106* MC
Unrestricted Free Electives	32-18* MC	36-18* MC
Total	**120 MC**	**160 MC**

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