

Mathematical Institute - Subject Panels 2023-24 {Courses in brackets will not run in the current year}

PANEL	CONVENOR	Supporting RGA	Part C COURSES	Part B COURSES
Logic	Prof Udi Hrushovski	Krystle.Tong@maths.ox.ac.uk	C1.1 Model theory C1.2 Gödel Incompleteness Theorems C1.3 Analytic Topology C1.4 Axiomatic Set Theory	B1.1 Logic B1.2 Set Theory
Algebra	Prof Kobi Kremnizer	Helen.Stringer@maths.ox.ac.uk	C2.1 Lie Algebras C2.2 Homological Algebra C2.3 Representation Theory of Semisimple Lie Algebras C2.4 Infinite Groups C2.5 Non-commutative Rings C2.6 Introduction to Schemes C2.7 Category Theory	B2.1 Introduction to Representation Theory B2.2 Commutative Algebra B3.1 Galois Theory* B3.4 Algebraic Number Theory *
Geometry, Number Theory and Topology	Prof Damian Rossler	Krystle.Tong@maths.ox.ac.uk	C3.1 Algebraic Topology C3.2 Geometric Group Theory C3.3 Differentiable Manifolds C3.4 Algebraic Geometry C3.5 Lie Groups C3.6 Modular Forms C3.7 Elliptic Curves C3.8 Analytic Number Theory C3.9 Computational Algebraic Topology C3.10 Additive Combinatorics C3.11 Riemannian Geometry C3.12 Low-Dimensional Topology FROM 2021 C3.12 Low-dimensional topology	B3.1 Galois Theory*[P] B3.2 Geometry of Surfaces B3.3 Algebraic Curves B3.4 Algebraic Number Theory*[P] B3.5 Topology and Groups
Analysis	Prof Luc Nguyen	Ariana.Weldon@maths.ox.ac.uk	C4.1 Further Functional Analysis {C4.2 Linear Operators} C4.3 Functional Analytic Methods for PDEs C4.4 Hyperbolic Equations {C4.5 Ergodic Theory} C4.6 Fixed Point Methods for Nonlinear PDEs {C4.7 Dynamical Systems and Energy Minimization} C4.8 Complex Analysis: Conformal Maps and Geometry C4.9 Optimal Transport & Partial Differential Equations*[P]	B4.1 Functional Analysis I B4.2 Functional Analysis II B4.3 Distribution Theory B4.4 Fourier Analysis and PDEs B5.2 Applied Partial Differential Equations*
Mathematical Methods and Applications	Prof. Alain Goriely and Prof. Dominic Vella	Nicola.Kirkham@maths.ox.ac.uk	{C5.1 Solid Mechanics} C5.2 Elasticity and Plasticity {C5.3 Statistical Mechanics} C5.4 Networks C5.5 Perturbation Methods C5.6 Applied Complex Variables C5.7 Topics in Fluid Mechanics C5.9 Mathematical Mechanical Biology C5.11 Mathematical Geoscience C5.12 Mathematical Physiology	B5.1 Stochastic Modelling of Biological Processes B5.2 Applied Partial Differential Equations*[P] B5.3 Viscous Flow B5.4 Waves and Compressible Flow B5.5 Further Mathematical Biology B5.6 Nonlinear Systems
Numerical Analysis and data science	Prof Mike Giles	Gen.Billionaire@maths.ox.ac.uk	C6.1 Numerical Linear Algebra C6.2 Continuous Optimization C6.3 Approximation of Functions C6.4 Finite Element Methods for PDEs C6.5 Theories of Deep Learning	B6.1 Numerical Solution of Partial Differential Equations B6.2 Optimisation for Data Science B6.3 Integer Programming
Mathematical Physics	Prof Fernando Alday	Krystle.Tong@maths.ox.ac.uk	C7.1 Theoretical Physics (run by physics department) C7.4 Introduction to Quantum Information C7.5 General Relativity I C7.6 General Relativity II C7.7 Random Matrix Theory	B7.1 Classical Mechanics B7.2 Electromagnetism B7.3 Further Quantum Theory

Stochastics, Discrete Mathematics and Information	Prof Ben Hambly	Ariana.Weldon@maths.ox.ac.uk	C8.1 Stochastic Differential Equations C8.2 Stochastic Analysis and PDEs C8.3 Combinatorics C8.4 Probabilistic Combinatorics C8.5 Introduction to Schramm-Loewner Evolution {C8.6 Limit Theorems and Large Deviations in Probability} C4.9 Optimal Transport & Partial Differential Equations*	B8.1 Probability, Measure and Martingales B8.2 Continuous Martingales and Stochastic Calculus B8.3 Mathematical Models of Financial Derivatives B8.4 Information Theory B8.5 Graph Theory
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* = The course is the responsibility of more than one panel. If one of the panels takes the lead, this is indicated by (P).