

## MATHEMATICAL TRIPOS PART III

Lectures will be held in the Meeting Rooms (MR) of the Centre for Mathematical Sciences, Clarkson Road, unless otherwise stated.

Lectures held in Meeting Rooms 2, 3, 4, 5, 9 and 13 will be live-streamed. The live-stream can be accessed via the Panopto block on the corresponding lecture course Moodle.

Lecture courses marked \* will be delivered remotely on Zoom until further notice. Students may use the meeting room indicated to ‘attend’ these lectures remotely in real time on their own device, subject to occupancy limits.

All Part III and PhD students in the Faculty are able to self-enrol on Part III Moodle courses. All other members of the University wishing to access these courses are requested to contact [partiii-secretary@maths.cam.ac.uk](mailto:partiii-secretary@maths.cam.ac.uk).

There will be a meeting on the morning of Wednesday 6 October for those intending to offer courses in Part III. Students should refer to the Notes for New Part III Students for further details.

There is a series of meetings for Part III students on Wednesdays at 4.15pm. Students are invited to refer to the Part III Handbook for more details.

For a personalised version of the timetable, which you can import into your own electronic calendar, please see <http://www.timetable.cam.ac.uk>.

### MICHAELMAS 2021

#### **Quantum Information Theory**

DR N. DATTA  
M. W. F. 9, *MR4*

#### **Introduction to Non-Linear Analysis**

PROF. P. RAPHAEL  
M. W. F. 9, *MR5*

#### **Category Theory**

PROF. P. T. JOHNSTONE  
M. W. F. 9, *MR9*

#### **Formation of Galaxies\***

PROF. N. W. EVANS  
M. W. F. 9, *MR11*

### LENT 2022

#### **String Theory**

DR D. SKINNER  
M. W. F. 9, *MR2*

#### **Infinite Groups**

DR H. BRADFORD  
M. W. F. 9, *MR5*

#### **Quantum Computation**

DR S. STRELCHUIK  
M. W. F. 9, *MR9*

#### **Functional Data Analysis**

PROF. J. A. D. ASTON  
M. W. F. 9, *MR12*

### EASTER 2022

#### **Gauge/Gravity Duality**

DR A. C. WALL  
M. Tu. Th. F. 10, *MR3*

**Biological Physics and Fluid Dynamics**  
PROF. R. GOLDSTEIN, PROF. E. LAUGA  
M. W. F. 9, *MR13*

**Mixing Times of Markov Chains**  
A. PREVOST  
M. W. F. 9, *MR14*

**Cosmology**  
DR B. D. SHERWIN  
M. W. F. 10, *MR2*

**Algebraic Geometry**  
DR D. RANGANATHAN  
M. W. F. 10, *MR5*

**Advanced Probability**  
PROF. J. R. NORRIS  
M. W. F. 10, *MR9*

**Slow Viscous Flow**  
PROF. J. R. LISTER  
M. W. F. 10, *MR12*

**Symmetries, Particles and Fields**  
PROF. B. ALLANACH  
M. W. F. 11, *MR2*

**Unbounded Operators and Semigroups**  
DR D. M. A. STUART  
M. W. 11, *MR4*

**Algebraic Topology**  
O. RANDAL-WILLIAMS  
M. W. F. 11, *MR5*

**Structure and Evolution of Stars**  
DR A. N. ZYTKOW  
M. W. F. 11, *MR11*

**Fluid Dynamics of Climate**  
PROF. P. HAYNES  
M. W. F. 11, *MR12*

**Perturbation Methods**  
PROF. N. PEAKE  
M. W. 9, *MR13*

**Black Holes**  
DR J. SANTOS  
M. W. F. 10, *MR3*

**Elliptics Curves**  
DR T. FISHER  
M. W. F. 10, *MR4*

**Advanced Financial Models**  
DR M. TEHRANCHI  
M. W. F. 10, *MR5*

**Computability and Logic\***  
DR J. V. SIQUEIRA  
M. W. F. 10, *MR12*

**Fluid Dynamics of the Solid Earth**  
DR J. NEUFELD, PROF. G. WORSTER  
M. W. F. 10, *MR13*

**Topics in Convex Optimisation**  
DR H. FAWZI  
M. W. 10, *MR14*

**Modular Forms**  
PROF. J. THORNE  
M. W. F. 11, *MR4*

**Stochastic Calculus and Applications**  
DR S. SARKAR  
M. W. F. 11, *MR5*

**Solitons, Instantons and Geometry**  
DR M. DUNAJSKI  
M. W. 11, *MR9*

**Fluid Dynamics of the Environment**  
DR S. DALZIEL  
M. W. F. 11, *MR12*

**General Relativity**

PROF. H. REALL  
M. W. F. 12, *MR2*

**Modern Statistical Methods**

DR R. SHAH  
M. W. F. 12, *MR4*

**Functional Analysis**

DR A. ZSAK  
M. W. F. 12, *MR5*

**Mapping Class Groups**

DR H. WILTON  
M. W. 12, *MR12*

**Astrophysical Fluid Dynamics**

DR R. RAFIKOV  
M. W. F. 12, *MR13*

**Commutative Algebra\***

PROF. M. GROSS  
Tu. Th. S. 9, *MR4*

**Topics in Statistical Theory**

PROF. R. J. SAMWORTH  
Tu. Th. 9, *MR5*

**Five Ways to Think about Primes**

DR A. WALKER  
Tu. Th. S. 9, *MR9*

**Theoretical Physics of Soft Condensed Matter**

PROF. M. CATES  
Tu. Th. 9, *MR12*

**Statistical Field Theory**

DR C. THOMAS  
Tu. Th. 10, *MR3*

**Percolation and Related topics**

DR D. YEO  
Tu. Th. 10, *MR5*

**Extrasolar Planets: Atmospheres and Interiors**

DR N. MADHUSUDHAN  
M. W. F. 11, *MR13*

**Large Cardinals**

PROF. B. LÖWE  
M. W. 11, *MR14*

**Supersymmetry**

PROF. D. TONG  
M. W. F. 12, *MR3*

**Astrostatistics**

DR K. MANDEL  
M. W. F. 12, *MR5*

**Field Theory in Cosmology**

PROF. E. P. SHELLARD, DR S. MELVILLE  
M. W. F. 12, *MR11*

**Representation Theory of Symmetric Groups**

DR S. LAW  
M. W. F. 12, *MR12*

**Toric Geometry**

DR N. NABIJOU  
M. W. F. 12, *MR13*

**Elliptic Partial Differential Equations\***

PROF. N. WICKRAMASEKERA  
M. W. F. 12, *MR14*

**Inverse Problems**

DR M. SABATÉ LANDMAN  
Tu. Th. 9, *MR4*

**Coxeter Groups**

DR R. BOYD  
Tu. Th. 9, *MR5*

**Robust Statistics\***

DR P.-L. LOH  
Tu. Th. 9, *MR9*

**Finite Dimensional Lie and Associative Algebras**  
DR C. J. B. BROOKES  
Tu. Th. S. 10, *MR9*

**Statistics in Medical Practice +**  
DR C. JACKSON AND COLLEAGUES  
Tu. Th. 10, *MR14* (Twelve lectures)

**Analysis of Partial Differential Equations**  
DR Z. WYATT  
Tu. Th. S. 10, *MR13*

**Causal Inference**  
DR Q. ZHAO  
Tu. Th. 11, *MR5*

**Differential Geometry**  
DR J. SMITH  
Tu. Th. S. 11, *MR9*,

**Distribution Theory and Applications**  
DR A. ASHTON  
Tu. Th. 11, *MR13*

**Quantum Field Theory**  
PROF. N. DOREY  
Tu. Th. S. 12, *MR2*

**Combinatorics**  
PROF. I. LEADER  
Tu. Th. 12, *MR3*

**Symplectic Geometry**  
PROF. G. PATERNAIN  
Tu. Th. 12, *MR9*

**Concentration Inequalities\***  
DR V. JOG  
Tu. Th. 12, *MR11*

**Local Fields**  
DR R. ZHOU  
Tu. Th. S. 12, *MR12*

**Introduction to Additive Combinatorics\***  
PROF. W. T. GOWERS  
Tu. Th. 9, *MR12*

**Modern Stellar Dynamics**  
DR E. VASILIEV  
Tu. Th. 9, *MR13*

**The Standard Model**  
PROF. F. QUEVEDO  
Tu. Th. S. 10, *MR2*

**Complex Manifolds**  
DR A. KOVALEV  
Tu. Th. S. 10, *MR5*

**Statistical Learning in Practice**  
DR R. ALTMAYER  
Tu. Th. S. 10, *MR9 12+12*

**Stochastic Processes in Theoretical Physics**  
DR R. ADHIKARI, DR M. BRUNA  
Tu. Th. 10, *MR12*

**Schramm-Loewner Evolutions**  
DR L. SCHOUIG  
Tu. Th. 10, *MR13*

**Astrophysical Black Holes**  
DR D. SIJACKI  
Tu. Th. 10, *MR14*

**Numerical Solution of Differential Equations**  
PROF. A. ISERLES  
Tu. Th. S. 11, *MR3*

**Quantum Information, Foundations and Gravity**  
PROF. A. KENT  
Tu. Th. 11, *MR5*

**Analysis of Survival Data+**  
DR P. TREASURE  
Tu. Th. 11, *MR9 (TWELVE LECTURES)*

**Approximation Theory**  
DR A. SHADRIN  
Tu. Th. S. 12, *MR13*

**Binary Stars**  
PROF. C. TOUT  
Tu. Th. 11, *MR14*

**Advanced Quantum Field Theory**  
DR M. WINGATE  
Tu. Th. S. 12, *MR2*

**Information Theory**  
PROF. I. KONTOYIANNIS  
Tu. Th. 12, *MR9*

**Knots**  
PROF. J. RASMUSSEN  
Tu. Th. S. 12, *MR13*

**Dynamics of Astrophysical Discs**  
DR H. LATTER  
Tu. Th. 12, *MR14*

**Laboratory Demonstrations in Fluid Dynamics**  
DR J. NEUFELD, DR S. DALZIEL  
W. 2-3:30, *Fluids Laboratory*

+ These two courses constitute the 24 lecture course in Statistics in Medicine. For examination purposes, Statistics in Medicine is considered a Lent term course.