

# MATHEMATICAL TRIPOS PART III

Last update 18 Jan. 12

All lectures are held at the *Centre for Mathematical Sciences, Clarkson Road* unless otherwise stated. There will be a meeting in *MR2* on Wednesday 5 October 2011 at 9.30 a.m. for all those who intend to offer courses in Part III.

There is a series of meetings for Part III students in *MR2*, Centre for Mathematical Sciences on Wednesdays at 4.15 p.m. Students are invited to refer to the Part III Handbook for more details.

## MICHAELMAS 2011

### Advanced Probability

DR P. SOUSI  
M. W. F. 9, *MR2*

### Differential Geometry

DR J. A. ROSS  
M. W. F. 9, *MR9*

### Statistical Field Theory

PROF. R. R. HORGAN  
M. W. 9, *MR12*

### Astrophysical Fluid Dynamics

PROF. J. C. B. PAPAIOZOU  
M. W. F. 9, *MR13*

### Introduction to Iwasawa Theory

PROF. J. H. COATES  
M. W. F. 9, *MR14* (Beginning 10 Oct.)

### General Relativity

DR H. S. REALL  
M. W. F. 10, *MR2*

### Algebraic Geometry

DR C. BIRKAR  
M. W. F. 10, *MR5*

### Random Matrices

DR V. KARGIN  
M. W. 10, *MR12*

### Slow Viscous Flow

PROF. J. R. LISTER  
M. W. F. 10, *MR13*

### Approximation Theory

DR A. SHADRIN  
M. W. F. 10, *MR14*

## LENT 2012

### Advanced Quantum Field Theory

PROF. H. OSBORN  
M. W. F. 9, *MR2*

### Representation Theory and Invariant Theory

DR S. MARTIN  
M. W. F. 9, *MR5*

### Abelian Varieties

DR M. SHEN  
M. W. F. 9, *MR9*

### Stochastic Calculus and Applications

PROF. J. R. NORRIS AND DR A. SEN  
M. W. F. 9, *MR12*

### Spectral Geometry

DR D. BARDEN  
M. W. F. 9, *MR13*

### Advanced Topics in Fluid Mechanics of Climate

PROF. P. F. LINDEN, DR J. A. NEUFELD AND DR J.  
R. TAYLOR  
M. W. F. 9, *MR14*

### String Theory

PROF. M. J. PERRY  
M. W. F. 10, *MR2*

### Topos Theory

DR O. CARAMELLO  
M. W. F. 10, *MR5*

### Convection

PROF. M. R. E. PROCTOR  
M. W. F. 10, *MR9*

### Galactic Astronomy and Dynamics

PROF. N.W. EVANS  
M. W. F. 10, *MR11*

## EASTER 2012

### Solitons and Instantons

PROF. N. DOREY  
M. Tu. Th. F. 12, *MR9*

**Cosmology**

PROF. J. D. BARROW AND DR A. D CHALLINOR  
M. W. F. 11, *MR3*

**Lie Algebras and their Representations**

DR C. J. B. BROOKES  
M. W. F. 11, *MR5*

**Fundamentals in Fluid Mechanics of Climate**

DR S. B. DALZIEL AND PROF. P. F. LINDEN  
M. W. F. 11, *MR9*

**Stochastic Networks**

PROF. F. P. KELLY  
M. W. F. 11, *MR12*

**Introduction to Functional Analysis**

DR D. J. H. GARLING  
M. W. F. 11, *MR13*

**Numerical Solution of Differential Equations**

PROF. A. ISERLES  
M. W. F. 11, *MR14*

**Symmetries and Particles**

PROF. M. B. GREEN  
M. W. F. 12, *MR2*

**Commutative Algebra**

PROF. B. J. TOTARO  
M. W. F. 12, *MR5*

**Advanced Financial Models**

PROF. L. C. G. ROGERS  
M. W. F. 12, *MR9*

**Mathematical Topics in Kinetic Theory**

DR C. MOUHOT  
M. W. F. 12, *MR14*

**Biological Physics**

PROF. R. E. GOLDSTEIN AND DR U. KEYSER  
M. W. F. 12.10, *MR13*

**Quantum Field Theory**

PROF. A. C. DAVIS  
Tu. Th. S. 9, *MR2*

**Ramsey Theory**

PROF. I. B. LEADER  
Tu. Th. 9, *MR3*

**Statistical Theory**

DR R. NICKL  
M. W. F. 10, *MR12*

**Complex Manifolds**

PROF. P. M. H. WILSON  
M. W. F. 10, *MR13*

**Galois Cohomology**

DR C. VIAL  
M. W. F. 10, *MR14*

**Mathematics of Operational Research**

DR F. A. FISCHER  
M. W. F. 11, *MR3*

**Wave Propagation and Scattering**

DR O. RATH-SPIVAK AND DR E. BRAMBLEY  
M. W. F. 11, *MR5*

**Advanced Cosmology**

PROF. E. P. S. SHELLARD AND DR E. LIM  
M. W. F. 11, *MR9*

**Semiparametric Statistics**

DR I. CASTILLO  
M. W. 11, *MR12*

**Riemannian Geometry**

DR A. G. KOVALEV  
M. W. F. 11, *MR13*

**Prime Numbers**

PROF. B. J. GREEN  
M. W. F. 11, *MR14*

**The Standard Model**

DR M. B. WINGATE  
M. W. F. 12, *MR2*

**Origin and Evolution of Galaxies**

PROF. M. G. O. HAEHNELT  
M. W. F. 12, *MR9*

**Topics in Calculus and Algebra**

PROF. I. GROJNOWSKI  
M. W. F. 12, *MR11*

**Applied Statistics**

DR B. D. M. TOM  
M. 12, *MR12*, W. 12, *Statistical Laboratory Computer*

**Room (From 23 Jan. to 15 Feb.)**

**Applied Statistics**

DR I. COSMA AND DR R. J. EVANS

Tu. 2-4, *Statistical Laboratory* (Eight classes), Th.  
9, *MR12* (Eight lectures)

**Elliptic Curves**

DR V. DOKCHITSER

Tu. Th. 9, *MR13*

**Percolation and Related Topics**

PROF. G. R. GRIMMETT

Tu. Th. 10, *MR2*

**Planetary System Dynamics**

DR M. C. WYATT

Tu. Th. S. 10, *MR9*

**Local Fields**

DR T. A. FISHER

Tu. Th. S. 10, *MR13*

**Algebraic Topology**

PROF. N. I. SHEPHERD-BARRON

Tu. Th. S. 11, *MR4*

**Structure and Evolution of Stars**

DR C. A. TOUT

Tu. Th. S. 11, *MR5*

**Combinatorics**

PROF. A. G. THOMASON

Tu. Th. 11, *MR9*

**Reaction-Diffusion Equations**

DR M.-T. WOLFRAM

Tu. Th. 11, *MR11*

**Time Series and Monte Carlo Inference (I) +**

PROF. A. P. DAWID

Tu. 11, *MR12*

**Elliptic Partial Differential Equations**

DR B. KRUMMEL

Tu. Th. S. 11, *MR14*

**Kac-Moody and Virasoro Algebras**

DR A. J. WASSERMANN

M. W. F. 12, *MR13*

**Quantum Information Theory**

DR N. DATTA

M. W. F. 12, *MR14*

**Biostatistics**

DR P. TREASURE

M. W. F. 12, *MR12* (lectures on 20, 27 Jan., 3, 10, 17, 20,  
22, 24, 27, 29 Feb., 2, 5, 7, 9, 12 Mar. only)

PROF. S. BIRD, DR D. WHITE AND DR R. TURNER

W. 4-6, *MR12* (Weeks 1-3)

**Quantum Foundations**

DR B. GROISMAN

M. W. 3, *MR11*

**Supersymmetry**

PROF. B. ALLANACH

Tu. Th. 9, *MR2*

**Computable Function Theory**

DR T. E. FORSTER

Tu. Th. 9, *MR11*

**Time Series and Monte Carlo Inference (II) +**

PROF. A. P. DAWID

Tu. 9, *MR12*

**The Physics of the Polar Oceans, Sea Ice and Climate  
Change**

PROF. P. WADHAMS

Tu. Th. S. 9, *MR14* (Sixteen lectures)

**Knots and 4-Manifolds**

DR J. RASMUSSEN

Tu. Th. S. 9, *MR15*

**Black Holes**

PROF. P. K. TOWNSEND

Tu. Th. S. 10, *MR2*

**Optimal Investment**

DR M. TEHRANCHI

Tu. Th. 10, *MR5*

**Perturbation and Stability Methods**

PROF. N. PEAKE AND PROF. J. M. RALLISON  
Tu. Th. S. 12, *MR4*

**Category Theory**

DR J. GOEDECKE  
Tu. Th. S. 12, *MR5*

**Quantum Computation**

PROF. R. JOZSA AND DR A. MONTANARO  
Tu. Th. 12, *MR12*

**Symplectic Geometry**

PROF. G. P. PATERNAIN  
Tu. Th. 12, *MR13*

**Percolation on Graphs**

PROF. B. BOLLOBAS  
Tu. Th. 10, *MR9*

**Applications of Differential Geometry to Physics**

DR M. DUNAJSKI  
Tu. Th. 10, *MR11*

**Distribution Theory and Applications**

DR A. ASHTON  
Tu. Th. 10, *MR12*

**Turbulence**

DR P. A. DAVIDSON  
Tu. Th. 10, *MR13*

**Dynamics of Astrophysical Discs**

DR G. I. OGILVIE  
Tu. Th. 11, *MR5*

**Topics on Conformal Invariance and Randomness**

PROF. W. WERNER  
Tu. Th. 11, W. 3, *MR13* (Sixteen lectures)

**Hamiltonian Dynamical Systems**

DR A. SORRENTINO  
Tu. Th. S. 11, *MR14*

**Application of General Relativity**

MISS I. M. M. BORZYM  
Tu. Th. 12, *MR9*

**Actuarial Statistics**

DR S. M. PITTS  
Tu. Th. 12, *MR12*

*The following course is non-examinable*

**Laboratory Demonstrations in Fluid Dynamics**

DR S. B. DALZIEL  
Th. 2, *Fluids Laboratory*

+ These two courses constitute the sixteen-hour course in Time Series and Monte Carlo Inference