

## Lectures Proposed by the Board of the Faculty of Mathematics

For particulars of the University Composition Fee and the fees payable for attendance at separate courses of lectures see p. 2. Graduates of the University who are not reading for any University Examination may attend without payment any lectures proposed by the Faculty Board of Mathematics.

### MATHEMATICAL TRIPoS

Lectures for Part IA of the Mathematical Tripos will be held in the *Cockcroft Lecture Theatre* unless otherwise stated.

First year mathematics students are recommended to attend the induction session which will be held from 9.30 a.m. to 10.45 a.m. on Wednesday 3 October 2001, in the *Cockcroft Lecture Theatre*.

A meeting will be held for all Part IA students on Friday 3 May 2002 at 2 p.m. in *Mill Lane Room 3* to discuss examinations and examination techniques

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### PART IA

**Algebra and Geometry**  
DR A. F. BEARDON AND PROF. P. H. HAYNES M. Tu. W. Th.  
F. S. 11

**Differential Equations**  
PROF. D. O. GOUGH Tu. Th. S. 10  
Numbers and Sets  
DR I. B. LEADER M. W. F. 10

**Non-Examinable Courses**  
Introduction to Physics\*\*\*  
PROF. G. W. GIBBONS M. 9 (Twelve lectures) *Arts School Room B and W. 9 Arts School Room C*  
Topics in the History of Mathematics  
DR P. BURSILL-HALL M. W. F. 4 *Mill Lane Room 9*

**Analysis I**  
DR T. W. KORNER Tu. Th. S. 10

**Probability**  
PROF. G. R. GRIMMETT M. W. F. 11  
**Vector Calculus**  
DR S. T. C. SIKLOS Tu. Th. S. 11  
**Dynamics**  
DR J. M. STEWART M. W. F. 10  
**Linear Mathematics\***  
PROF. A. M. W. GLASS M. W. F. 12 *Mill Lane Room 3*

**Complex Methods\***  
DR C. TELEMAN M. Tu. Th. S. 10 (Sixteen lectures)  
**Special Relativity\***  
DR A. C. DAVIS W. F. 10 (Eight lectures)  
**Geometry\***  
DR T. K. CARNE M. W. F. 11 (Twelve lectures)  
**Optimization\***  
DR Y. SUHOV Tu. Th. S. 9 (Twelve lectures)  
*Mill Lane Room 3*  
**Numerical Analysis\***  
DR A. SHADRIN M. W. F. 12 (Twelve lectures)  
*Mill Lane Room 9*  
**Computational Projects\*\***  
DR N. NIKIFORAKIS Tu. Th. 11 (Six lectures)

### Mathematics with Computer Science Option:

Students taking this option should attend Algebra and Geometry, Analysis I Vector Calculus, Differential Equations and Probability from Part IA of the Mathematical Tripos, together with the courses from the Computer Science Tripos listed below. Students should note that the programming exercises will be taken into account by the Examiners.

**Introduction to Computer Science**  
PROF. I. M. LESLIE Th. 12 (One lecture)  
**Foundations of Computer Science**  
DR L. C. PAULSON Tu. Th. S. 12 (Fifteen lectures, beginning 6 Oct.)  
**Discrete Mathematics**  
DR P. ROBINSON Tu. Th. S. 12 (Eight lectures, beginning 10 Nov.)

**Practical ML under Windows**  
DR F. H. KING, MISS C. H. NORTHEAST AND MR R. J. STIBBS Th. 2–4 or 4–6 (Two Thursday classes) *Hopkinson Lecture Room*

**Programming Practical Class**  
DR L. C. PAULSON AND DR F. H. KING Th. 2–4 (Three fortnightly classes, beginning 18 Oct., or 25 Oct.) *Cockcroft Building, Floor 4*

**How to Study Computer Science**  
DR A. C. NORMAN AND OTHERS Th. 5 (One lecture, 18 Oct.) *Arts School, Room A*

**Tick-Four Briefing**  
DR F. H. KING Th. 5 (One lecture, 25 Oct.) *Hopkinson Lecture Room*

**Help Sessions**  
DR A. N. OTHER Th. 4 (Four classes, beginning 1 Nov.) *Hopkinson Lecture Room*

The same continued.  
PROF. G. WINSKEL Tu. Th. S. 12 (Eight lectures)

**Programming in Java**  
DR A. C. NORMAN Tu. Th. S. 12 (Sixteen lectures, beginning 5 Feb.)

**Programming Practical Class**  
DR F. H. KING Th. 2–4 (One class, 17 Jan. or 24 Jan.) *Cockcroft Building, Floor 4*

**UNIX Registration**  
DR F. H. KING, MISS C. H. NORTHEAST AND MR R. J. STIBBS Th. or F. 1.30–4 (One class, 31 Jan. or 1 Feb. or 7 Feb.) *Hopkinson Lecture Room*

**Programming Practical Class**  
DR F. H. KING AND DR A. C. NORMAN Th. 2–4 (Two fortnightly classes, beginning 14 Feb. or 21 Feb.) *Cockcroft Building, Floor 4*

**Operating Systems**  
MR T. L. HARRIS Tu. Th. S. 12

**Programming Practical Class**  
DR F. H. KING AND DR A. C. NORMAN Th. 1–4 (Two fortnightly classes, beginning 25 Apr. or 2 May) *Cockcroft Building, Floor 4*

\* Not examined in Part IA of the Tripos.

\*\* Not examined in Part IA of the Tripos. CATAM (Computer-Aided Teaching of All Mathematics) practical sessions will be held during the last two weeks of full Easter Term. Examination credit in Part Ib for this course will be gained by the submission of project files, and no question will be set on it in the examination. The maximum credit available will be approximately equivalent to that for a normal course of 16 lectures, and will be added directly to the credit obtained in the written papers.

\*\*\* This course assumes no prior knowledge of A-level Physics.

## Faculty of Mathematics (continued)

### MATHEMATICAL TRIPPOS, PART IA (continued) AND PART IB

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#### **Mathematics with Physics Option:**

Students taking this third option should attend Algebra and Geometry, Analysis I, Vector Calculus, Differential Equations and Probability from Part IA of the Mathematical Tripos, together with the lectures listed below in Part IA of the Natural Sciences Tripos (Course B version). They will be required to do Physics practical work, and are recommended to attend at least the first lecture of Course B of the Computing Course for Physical Scientists.

Foundations of Classical and Statistical Physics  
DR J. R. WALDRAM M. W. F. 9 *Chemical Laboratory,  
Lensfield Road*

Oscillations and Waves  
DR J. R. BATLEY M. W. F. 9 (First Twelve  
lectures) *Chemical Laboratory, Lensfield  
Road*

Fields, Relativity and Quantum Physics  
DR J. R. CARTER M. W. F. 9 (Last Twelve  
lectures) *Chemical Laboratory, Lensfield  
Road*

The same continued.

### MATHEMATICAL TRIPPOS PART IB

Lectures for Part Ib of the Mathematical Tripos will be held in *Mill Lane Lecture Rooms* unless otherwise stated.  
Note that some lectures start at 10.15 a.m., 11.15 a.m. or 12.15 p.m.

Analysis II  
DR G. P. PATERNAIN Tu. Th. S. 11 *Room 3*  
Methods  
DR E. P. S. SHELLARD M. W. F. 9 *Room 3*  
Quadratic Mathematics  
DR C. B. THOMAS Tu. Th. 9 *Room 3*  
Fluid Dynamics  
PROF. H. E. HUPPERT Tu. Th. 12 *Room 9*  
Quantum Mechanics  
PROF. P. K. TOWNSENDS Tu. Th. 10 *Room 9*  
Linear Mathematics  
DR J. M. E. HYLAND M. W. F. 10 *Room 9*  
Electromagnetism\*  
PROF. N. O. WEISS M. W. F. 11.15 *CMS Meeting Room 2*  
Markov Chains\*  
DR J. R. NORRIS M. W. F. 12.15 *CMS Meeting Room 2*

Statistics  
DR S. M. PITTS W. S. 9 *Room 3*  
Quantum Mechanics  
PROF. M. B. GREEN Tu. Th. S. 10 (First sixteen  
lectures, ending 23 Feb.) *Room 9*  
Special Relativity  
PROF. G. W. GIBBONS Tu. Th. S. 10 (Last eight  
lectures, beginning 26 Feb.) *Room 9*  
Fluid Dynamics  
PROF. M. E. McINTYRE Th. S. 11 *Room 6*  
Complex Methods  
DR P. D. D'EATH M. F. 9 *Room 3*  
Quadratic Mathematics  
DR A. G. KOVALEV Tu. S. 12 *Room 9*  
Further Analysis  
DR T. K. CARNE Tu. Th. 9 *Room 3*  
Groups, Rings and Fields\*  
PROF. N. I. SHEPHERD-BARRON M. W. F. 10.15  
*Room 9*  
Dynamics of Differential Equations\*  
PROF. M. R. E. PROCTOR M. W. F. 12.15 *Room 9*  
Principles of Dynamics\*  
PROF. N. TUROK M. W. F. 11.15 *Room 9*  
Functional Analysis  
DR A. J. WASSERMANN Tu. 11 Th. 12 *Room 9*

Numerical Analysis  
DR A. SHADRIN M. W. F. 12 (Twelve lectures)  
*Cockcroft Lecture Theatre*  
Geometry  
DR T. K. CARNE M. W. F. 11 (Eight lectures)  
*Cockcroft Lecture Theatre*  
Special Relativity  
DR A. C. DAVIS W. F. 10 (Eight lectures)  
*Cockcroft Lecture Theatre*  
Complex Methods  
DR C. TELEMAN M. Tu. Th. S. 10 (Sixteen  
lectures) *Cockcroft Lecture Theatre*  
Optimization  
DR Y. SUHOV Tu. Th. S. 9 (Twelve lectures)  
*Room 3*

\* Examined in the 2002 Part II (B) examination.

**Faculty of Mathematics (continued)****MATHEMATICAL TRIPPOS, PART II***Candidates for Part II may offer either Alternative A or Alternative B.*All lectures will be held in the *Centre for Mathematical Sciences meeting rooms (MR), Clarkson Road* unless otherwise stated.**MICHAELMAS 2001****LENT 2002****EASTER 2002****ALTERNATIVE A**

**Graph Theory**  
DR A. G. THOMASON M. W. 11 *MR 3*

**Electromagnetism**  
PROF. N. O. WEISS M. W. F. 11.15 *MR 2*

**Mathematical Methods**  
DR J. A. HUDSON Tu. F. 10 *MR 2*

**Functional Analysis**  
DR D. J. H. GARLING Tu. Th. S. 11 *MR 2*

**Algorithms and Networks**  
DR M. J. LUCZAK M. Th. 10 *MR 2*

**Statistical Physics and Cosmology**  
PROF. P. K. TOWNSEND W. S. 10 *MR 4*

**Logic, Computation and Set Theory**  
DR P. T. JOHNSTONE M. W. F. 9 (First Sixteen lectures)  
*MR 2*

**Foundations of Quantum Mechanics**  
DR A. C. DAVIS Tu. Th. 9 *MR 2*

**Principles of Statistics**  
DR G. A. YOUNG Tu. Th. S. 12 *MR 2*

**Markov Chains**  
DR J. R. NORRIS M. W. F. 12.15 *MR 2*

**Computational Projects**  
DR N. NIKIFORAKIS M. W. F. 2 (Six lectures beginning  
8 Oct.) *Mill Lane Room 9*

**Computational Statistics and Statistical**  
**Modelling**

DR P. M. E. ALTHAM Tu. Th. 12 *MR 2*

**Number Theory**

PROF. J. H. COATES M. W. 9 *MR 3*

**Geometry of Surfaces**

DR A. CORTI Tu. Th. 10 *MR 4*

**Quantum Physics**

PROF. I. T. DRUMMOND M. W. 10 *MR 4*

**Transport Processes**

PROF. T. J. PEDLEY Tu. Th. 12 *MR 3*

**Numerical Analysis**

PROF. A. ISERLES M. W. F. 9 *MR 2*

**Stochastic Financial Models**

DR D. P. KENNEDY Tu. Th. 11 *MR 2*

**General Relativity**

DR P. D. D'EATH Tu. Th. 9 *MR 2*

**Theoretical Geophysics**

DR J. LISTER Tu. Th. 10 *MR 3*

**Principles of Dynamics**

PROF. N. TUROK M. W. F. 11.15 *Mill Lane*

*Room 9*

**Groups, Rings and Fields**

PROF. N. I. SHEPHERD-BARRON M. W. F. 10.15

*Mill Lane Room 9*

**Dynamics of Differential Equations**

PROF. M. R. E. PROCTOR M. W. F. 12.15 *Mill*

*Lane Room 9*

**Hilbert Spaces**  
DR G. R. ALLAN Tu. F. 10 *MR 3*

**Probability and Measure**  
DR A. M. STACEY Tu. Th. S. 11 *MR 4*

**Number Fields**

PROF. A. BAKER W. F. 12 *MR 4*

**Electrodynamics**

DR M. J. PERRY Tu. F. 10 *MR 4*

**Fluid Dynamics II**

PROF. H. K. MOFFATT M. W. F. 9 *MR 3*

**Methods of Mathematical Physics**

DR S. T. C. SIKLOS M. W. F. 11 *MR 4*

**Partial Differential Equations**

DR S. DEMOULINI M. Tu. Th. 12 *MR 3*

**Information Theory**

DR Y. SUHOV W. F. 12 *MR 3*

**Algebraic Topology**

PROF. B. J. TOTARO M. Th. 10 *MR 3*

**Galois Theory**

DR P. M. H. WILSON W. S. 10 *MR 3*

**Logic, Computation and Set Theory**

DR P. T. JOHNSTONE M. W. F. 9 *MR 2*

**Foundations of Quantum Mechanics**

DR A. C. DAVIS Tu. Th. 9 *MR 2*

**Principles of Statistics**

DR G. A. YOUNG Tu. Th. S. 12 *MR 2*

**Computational Projects**

DR N. NIKIFORAKIS M. W. F. 2 (Six lectures beginning  
8 Oct.) *Mill Lane Room 9*

**Differentiable Manifolds**

DR D. BARDEN W. S. 11 *MR 2, MR 3*

**Representation Theory**

DR J. SAXL M. W. F. 12 *MR 2*

**Waves in Fluid and Solid Media**

PROF. E. J. HINCH M. W. F. 12 *MR 3*

**Statistical Physics**

DR R. R. HORGAN Tu. Th. 10 *MR 2*

**Applications of Quantum Mechanics**

DR H. OSBORN M. W. F. 10 *MR 2*

**Applications**

DR J. NEKOVÁŘ Tu. Th. 10 *MR 5*

**Applied Probability**

DR M. J. LUCZAK Tu. Th. 9 *MR 4*

**Dynamical Systems**

PROF. SIR PETER SWINNERTON-DYER M. F. 11

*MR 2*

**Combinatorics**

DR I. B. LEADER M. W. 9 *MR 4*

**Optimization and Control**

PROF. R. R. WEBER W. F. 10 *MR 3*

**Riemann Surfaces**

DR C. TELEMAN Tu. Th. 12 *MR 4*

**Numerical Analysis**

PROF. A. ISERLES M. W. F. 9 *MR 2*

**Stochastic Financial Models**

DR D. P. KENNEDY Tu. Th. 11 *MR 2*

**General Relativity**

DR P. D. D'EATH Tu. Th. 9 *MR 2*

**Nonlinear Waves**

PROF. N. MANTON M. Tu. Th. F. 9 (Twelve  
lectures) *MR 4*

**Coding and Cryptography**

DR I. GROJNOWSKI M. Tu. Th. F. 10 (Twelve  
lectures) *MR 4*

**ALTERNATIVE B**

**Hilbert Spaces**  
DR G. R. ALLAN Tu. F. 10 *MR 3*

**Probability and Measure**

DR A. M. STACEY Tu. Th. S. 11 *MR 4*

**Number Fields**

PROF. A. BAKER W. F. 12 *MR 4*

**Electrodynamics**

DR M. J. PERRY Tu. F. 10 *MR 4*

**Fluid Dynamics II**

PROF. H. K. MOFFATT M. W. F. 9 *MR 3*

**Methods of Mathematical Physics**

DR S. T. C. SIKLOS M. W. F. 11 *MR 4*

**Partial Differential Equations**

DR S. DEMOULINI M. Tu. Th. 12 *MR 3*

**Information Theory**

DR Y. SUHOV W. F. 12 *MR 3*

**Algebraic Topology**

PROF. B. J. TOTARO M. Th. 10 *MR 3*

**Galois Theory**

DR P. M. H. WILSON W. S. 10 *MR 3*

**Logic, Computation and Set Theory**

DR P. T. JOHNSTONE M. W. F. 9 *MR 2*

**Foundations of Quantum Mechanics**

DR A. C. DAVIS Tu. Th. 9 *MR 2*

**Principles of Statistics**

DR G. A. YOUNG Tu. Th. S. 12 *MR 2*

**Computational Projects**

DR N. NIKIFORAKIS M. W. F. 2 (Six lectures beginning  
8 Oct.) *Mill Lane Room 9*

**Differentiable Manifolds**

DR D. BARDEN W. S. 11 *MR 2, MR 3*

**Representation Theory**

DR J. SAXL M. W. F. 12 *MR 2*

**Waves in Fluid and Solid Media**

PROF. E. J. HINCH M. W. F. 12 *MR 3*

**Statistical Physics**

DR R. R. HORGAN Tu. Th. 10 *MR 2*

**Applications of Quantum Mechanics**

DR H. OSBORN M. W. F. 10 *MR 2*

**Applications**

DR J. NEKOVÁŘ Tu. Th. 10 *MR 5*

**Applied Probability**

DR M. J. LUCZAK Tu. Th. 9 *MR 4*

**Dynamical Systems**

PROF. SIR PETER SWINNERTON-DYER M. F. 11

*MR 2*

**Combinatorics**

DR I. B. LEADER M. W. 9 *MR 4*

**Optimization and Control**

PROF. R. R. WEBER W. F. 10 *MR 3*

**Riemann Surfaces**

DR C. TELEMAN Tu. Th. 12 *MR 4*

**Numerical Analysis**

PROF. A. ISERLES M. W. F. 9 *MR 2*

**Stochastic Financial Models**

DR D. P. KENNEDY Tu. Th. 11 *MR 2*

**General Relativity**

DR P. D. D'EATH Tu. Th. 9 *MR 2*

A general introductory meeting will be held on Thursday 21 February 2002 for students interested in continuing to Part III of the Tripos in 2002–03. The meeting will be held in *MR 2* at the *Centre for Mathematical Sciences* at 4 p.m.

A meeting will be held on Friday 7 June 2002 for finalists who may continue to Part III of the Tripos in 2002–03. The meeting will be held in *MR 2* at the *Centre for Mathematical Sciences* at 2.15 p.m.

## Faculty of Mathematics (continued)

### MATHEMATICAL TRIPPOS, PART III

All lectures are held at the *Centre for Mathematical Sciences, Clarkson Road* unless otherwise stated.  
 There will be a meeting in *MR 2* on Wednesday 3 October 2001 at 9.30 a.m. for all those who intend to offer courses in Part III.

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### DEPARTMENT OF APPLIED MATHEMATICS AND THEORETICAL PHYSICS

Quantum Field Theory  
 PROF. I. T. DRUMMOND Tu. Th. S. 9 *MR 3*

Elementary Particle Physics  
 DR H. OSBORN M. W. F. 10 *MR 9*

Statistical Field Theory  
 DR R. R. HORGAN Tu. Th. 12 *MR 11*

Quantum Information Physics  
 DR D. JONATHAN AND DR G. MITCHISON Tu. Th. 11 *MR 3*  
 (Non-examinable, but essays will be set)

General Relativity  
 DR J. M. STEWART M. W. F. 9 *MR 9*

Cosmology  
 DR E. P. S. SHELLARD Tu. Th. S. 10 *MR 9*

Local and Global Bifurcations  
 DR J. H. P. DAWES M. W. F. 10 *MR 11*

Population Dynamics  
 DR M. KEELING M. W. 12 *MR 4*, *MR 12*

Structure and Evolution of Stars  
 DR C. A. TOUT M. W. F. 12 *MR 11*

Astrophysical Fluid Dynamics  
 PROF. D. O. GOUGH M. W. F. 11 *MR 11*

Magnetic Fields in Stars  
 PROF. N. O. WEISS Tu. Th. S. 11 *MR 11*

Numerical Solution of Differential Equations  
 PROF. A. ISERLES Tu. Th. S. 9 *MR 11*

Computer-aided Geometric Design  
 DR M. SABIN M. 10 *MR 4* and W. 11 *MR 9*

Slow Viscous Flow  
 DR J. R. LISTER Tu. Th. S. 10 *MR 11*

Perturbation Methods  
 DR S. J. COWLEY Tu. Th. 12 *MR 9*

Fundamentals of Atmosphere-Ocean Dynamics  
 PROF. M. E. MCINTYRE M. W. F. 9 *MR 11*

Mechanics of Composites  
 PROF. J. R. WILLIS Tu. Th. S. 11 *MR 9*

Cellular and Molecular Mechanics  
 PROF. L. MAHADEVAN and others. Th. 4–6 *Lecture Room 5, Department of Engineering*  
 (Non-examinable, but essays will be set)

Demonstrations in Fluid Mechanics  
 DR S. B. DALZIEL Th. 2 *Fluids Laboratory, CMS*

(Non-examinable, but essays will be set)

Advanced Quantum Field Theory  
 DR J. M. EVANS Tu. Th. S. 11 *MR 9*

Standard Model  
 DR S. DALLEY M. W. F. 10 *MR 11*  
 Supersymmetry  
 DR F. QUEVEDO Tu. Th. 10 *MR 11*

String Theory  
 PROF. P. GODDARD Tu. Th. S. 9 *MR 3*

Phase Transitions and Collective Phenomena  
 DR B. D. SIMONS Tu. Th. 12 *Cavendish Laboratory*

Black Holes  
 DR M. J. PERRY M. W. F. 11 *MR 3*  
 Applications of Differential Geometry to Physics  
 PROF. G. W. GIBBONS M. W. F. 9 *MR 9*

Symmetries and Patterns  
 PROF. M. R. E. PROCTOR Tu. Th. S. 11 *MR 11*

Galaxies  
 PROF. J. P. OSTRIKER Tu. Th. S. 9 *MR 11*  
 Physical Cosmology  
 DR O. LAHAV M. W. F. 10 *MR 5*

Accretion Discs  
 DR G. I. OGILVIE Tu. Th. 12 *MR 12*  
 Approximation Theory  
 DR A. SHADRIN M. W. F. 12 *MR 11*

Elastic Waves  
 DR J. A. HUDSON W. F. 11 *MR 11*  
 Environmental Fluid Dynamics  
 DR S. DALZIEL AND DR D. LEPPINEN Tu. Th. 12

*MR 11*  
 Non-Newtonian Fluid Mechanics  
 DR J. M. RALLISON M. W. F. 10 *MR 12*

Solidification of Fluids  
 DR M. G. WORSTER M. W. F. 9 *MR 12*  
 Stochastic Models of Transport and Mixing  
 PROF. P. H. HAYNES Tu. Th. 9 *MR 5*

Yang-Mills Fields

PROF. N. S. MANTON M. Tu. Th. F. 11 *MR 5*  
 Early Universe Cosmology  
 DR M. BUCHER AND DR R. G. CRITTENDEN M.  
 Tu. Th. F. 12 *MR 5*

### DEPARTMENT OF PURE MATHEMATICS AND MATHEMATICAL STATISTICS

DPMMS Part III courses are listed under four headings. General courses are intended to be of general mathematical interest. Basic courses are intended to give a broad introduction to specific topics. Additional courses may (but need not) be more advanced and are likely to be of more specialised interest. Fourthly a number of courses given by the Statistical Laboratory are available both to candidates for Part III and for the M.Phil. in Statistical Science.

#### General Courses

Algebraic Topology  
 DR C. B. THOMAS M. W. F. 11 *MR 5*  
 Differential Geometry  
 DR A. KOVALEV M. W. F. 12 *MR 5*

#### General Course

Banach Algebras  
 DR G. R. ALLAN M. W. F. 9 *MR 5*

**Faculty of Mathematics (continued)****MATHEMATICAL TRIPPOS, PART III (continued)**

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**DEPARTMENT OF PURE MATHEMATICS AND MATHEMATICAL STATISTICS (continued)****Basic Courses**

- Topics in Group Theory  
DR J. SAXL M. W. F. 12 *MR 9*  
Complex Analysis  
DR T. K. CARNE M. W. F. 10 *MR 5, MR 2, MR 5*  
Introduction to Functional Analysis  
DR T. W. KÖRNER Tu. Th. S. 11 *MR 5*  
Extremal Graph Theory  
DR A. G. THOMASON Tu. Th. 10 *MR 5*  
Ramsey Theory  
DR I. B. LEADER Tu. Th. 9 *MR 4*  
Toric Varieties  
DR P. M. H. WILSON Tu. Th. S. 12 *MR 5*  
Curves and their Jacobians  
PROF. N. I. SHEPHERD-BARRON Tu. Th. S. 9 *MR 9*  
Category Theory  
MS E. L.-G. CHENG M. W. F. 9 *MR 12*  
Elliptic Curves  
PROF. J. H. COATES M. W. F. 9 *MR 4*

**Additional Courses**

- Set Theory  
DR T. E. FORSTER Tu. Th. S. 12 *MR 4*  
Further Character Theory  
DR P. HEGEDUS Tu. Th. 12, F. 11 *MR 12*

**Courses given by the Statistical Laboratory**

- General**  
Advanced Probability  
DR O. HRYNIV Tu. Th. S. 9 *MR 5*  
Mathematics of Operational Research  
PROF. R. R. WEBER M. W. F. 10 *MR 12*

**Basic**

- Applied Statistics  
DR P. M. E. ALTHAM AND DR B. D. M. TOM Tu. Th. 11 *MR 12*  
Algebraic Coding  
DR Y. SUHOV M. W. 11 *MR 12*  
Probability  
DR T. LEVY Tu. Th. 9 *MR 12*  
(non-examinable course)  
Actuarial Statistics  
DR S. M. PITTS M. F. 11 *MR 9, MR 3*  
Biostatistics  
DR P. TREASURE Tu. Th. 10 *MR 12*  
Interacting Particle Systems  
PROF. G. R. GRIMMETT M. F. 12 *MR 12*  
Advanced Financial Models  
DR D. P. KENNEDY M. W. F. 9 *MR 5*

**Basic Course**

- Symplectic Geometry and Hamiltonian Systems  
DR G. P. PATERNAIN M. W. F. 12 *MR 9*  
Compact Lie Groups  
DR C. TELEMAN Tu. Th. 10 *MR 9*  
Knot Theory  
PROF. W. B. R. LICKORISH M. W. F. 10 *MR 9*  
Analytic Number Theory  
PROF. A. BAKER W. F. 12 *MR 4*  
Modular Forms  
DR J. NEKOVÁŘ Tu. Th. S. 12 *MR 5*

**Additional Courses**

- Constructive Galois Theory  
DR N. F. J. INGLIS Tu. Th. S. 11 *MR 5*  
Partially Ordered Groups  
PROF. A. M. W. GLASS M. W. F. 9 *MR 11*  
Harmonic Analysis  
DR D. J. H. GARLING Tu. Th. S. 11 *MR 4*  
Algebraic Methods in Combinatorics  
DR O. PIKHURKO Tu. Th. 12 *MR 9*  
Geometric Invariant Theory  
PROF. B. J. TOTARO M. W. F. 11 *MR 9*  
Elementary Toposes  
DR P. T. JOHNSTONE Tu. Th. S. 9 *MR 12*  
Infinite and Finite Model Theory  
DR J. M. E. HYLAND AND DR A. DAWAR M. W. F.  
11 *MR 5*

**Courses given by the Statistical Laboratory**

- General**  
Statistical Theory  
DR G. A. YOUNG Tu. Th. S. 10 *MR 12*

**Basic**

- Mathematical Models in Financial Management  
PROF. M. A. H. DEMPSTER W. 4–6 *Judge Institute*  
Stochastic Calculus and Applications  
DR J. R. NORRIS M. W. F. 11 *MR 12*  
Experimental Design and Multivariate Analysis  
DR P. M. E. ALTHAM AND DR S. M. PITTS M. W.  
F. 12 *MR 12*  
Biostatistics  
DR S. BIRD AND DR D. SPIEGELHALTER M. 4–6  
(Four lectures, starting 21 Jan.) *MR 12*  
Biostatistics  
DR H. CORDELL AND DR D. CLAYTON W. 2–4  
(Four lectures, starting 16 Jan.) *MR 12*  
Quantum Information Theory  
DR N. DATTA AND DR O. T. JOHNSON M. W. F.  
12 *MR 5*  
Time Series and Monte Carlo Inference  
DR O. HRYNIV, DR S. P. BROOKS AND DR R. KING  
Tu. Th. 11 *MR 12* and F. 11 *MR 4*

**Basic**

- Applied Statistics  
DR P. M. E. ALTHAM AND DR B. D. M. TOM Tu.  
Th. 9 *MR 12* (Eight lectures)

*There is a series of meetings for Part III students in MR 2, Centre for Mathematical Sciences, at 4.15 p.m. on the following topics:*

- 4 October 2001: PhD applications to Cambridge and other universities  
11 October 2001: Exams and lectures  
18 October 2001: How to write a Part III essay  
15 November 2001: Research opportunities in Cambridge

**Faculty of Mathematics (continued)****M.PHIL. IN STATISTICAL SCIENCE**Lectures are held in the *Centre for Mathematical Sciences*, unless otherwise stated**MICHAELMAS 2001****LENT 2002****EASTER 2002**

Mathematics of Operational Research* PROF. R. R. WEBER M. W. F. 10 <i>MR 12</i> Applied Statistics* DR P. M. E. ALTHAM AND DR B. D. M. TOM Tu. Th. 11 <i>MR 12</i>	Statistical Theory* DR G. A. YOUNG Tu. Th. S. 10 <i>MR 12</i> Biostatistics DR S. BIRD AND DR D. SPIEGELHALTER M. 4–6 (Four lectures, starting 21 Jan.) <i>MR 12</i> Biostatistics DR H. CORDELL AND DR D. CLAYTON W. 2–4 (Four lectures, starting 16 Jan.) <i>MR 12</i> Experimental Design and Multivariate Analysis DR P. M. E. ALTHAM AND DR S. M. PITTS M. W. F. 12 <i>MR 12</i> Time Series and Monte Carlo Inference DR O. HRYNIV, DR S. P. BROOKS AND DR R. KING Tu. Th. 11 <i>MR 12</i> and F. 11 <i>MR 4</i>	Applied Statistics* DR P. M. E. ALTHAM AND DR B. D. M. TOM Tu. Th. 9 <i>MR 12</i>
Biostatistics DR P. TREASURE Tu. Th. 10 <i>MR 12</i>		
Probability* DR T. LEVY Tu. Th. 9 <i>MR 12</i>		
Advanced Financial Models DR D. P. KENNEDY M. W. F. 9 <i>MR 5</i>		
Actuarial Statistics DR S. M. PITTS M. F. 11 <i>MR 9, MR 3</i>		

Candidates will be expected to have attended the basic courses (marked \*) and an appropriate number of courses (and all will receive advice individually about this). Subject to the approval of the M.Phil. examiners, they also offer for examination any Part III courses given by the Statistical Laboratory.

**COURSES INTENDED FOR GRADUATES**

Complex Continued Fractions DR A. F. BEARDON Tu. Th. S. 9 <i>MR 9</i>	Topics in Algebraic Geometry DR A. CORTI M. Tu. Th. F. 10 <i>MR 11</i> (Sixteen lectures) (Non-examinable)
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**OTHER MEETINGS**

A meeting will be held on 4 October 2001 at 2 p.m. in *MR 2* for new supervisors (primarily those new to Cambridge).  
A seminar will be held on 25 October 2001 at 5 p.m. in *MR 2* for all supervisors.