

Lectures proposed by the Board of the Faculty of Engineering

For particulars of the University Composition Fee and of the fees payable at separate courses of lectures, see p. 2.

ENGINEERING TRIPOS

MICHAELMAS 2004

LENT 2005

EASTER 2005

PART IA

First year: for students intending to take Part IA in 2005

The lecture rooms are indicated as follows: *LT0* Lecture theatre 0; *LT1* Lecture theatre 1; *LT2* Lecture theatre 2; *LR3* Lecture room 3; *LR4* Lecture room 4; *LR6* Lecture room 6; *LR10* Lecture room 10.

(A detailed timetable will be displayed in the Department. Further details are also available on the Web at <http://www.eng.cam.ac.uk/teaching/courses/syllabuses.html>)

Paper 1 (Mechanical Engineering)

DR H. E. M. HUNT *LT0*
Mechanics (Sixteen lectures)

DR D. CEBON *LT0*
Mechanical Vibrations (Four lectures)
PROF. H. P. HODSON AND PROF. S. HOCHGREB *LT0*
Thermofluid Mechanics (Sixteen lectures)

The same continued. (Eight lectures)

The same continued. (Eight lectures)

Paper 2 (Structural Mechanics and Materials)

DR C. R. MIDDLETON *LT0*
Structural Mechanics (Twelve lectures)

DR S. D. GUEST *LT0*
Structural Mechanics (Twelve lectures)
DR H. R. SHERCLIFF *LT0*
Materials (Ten lectures)

DR M. P. F. SUTCLIFFE *LT0*
The same continued. (Ten lectures)

Paper 3 (Electrical and Information Engineering)

DR D. M. HOLBURN
Linear Circuits and Devices (Sixteen lectures)

DR D. M. HOLBURN *LT0*
The same continued. (Two lectures)
DR F. UDREA *LT0*
The same continued. (Four lectures)

DR T. D. WILKINSON *LT0*
Electromagnetics (Twelve lectures)

PROF. R. V. PENTY *LT2*
Digital Circuits (Sixteen lectures)

Paper 4 (Mathematics)

DR W. R. GRAHAM (Twelve lectures)
DR A. WHITE (Twelve lectures) *LT2*
DR A. R. L. TRAVIS (Sixteen lectures) *LT1*
DR A. H. GEE (Four lectures)

DR R. W. PRAGER *LT0* (Nine lectures)
DR A. H. GEE (Four lectures)

PROF. M. C. SMITH *LT0* (Seven lectures)

DR G. T. PARKS *LT0*
Dimensional Analysis (Four lectures) *LT0*

DR P. J. CLARKSON AND OTHERS
Design of Products *LT0* (Eight lectures)

PROF. M. J. GREGORY AND OTHERS *LT0*
Engineer in Society (Eight lectures)

DR M. P. F. SUTCLIFFE AND OTHERS
Laboratory

The same continued.
Laboratory Signing (to be arranged)

The same continued.

DR P. J. LONG AND OTHERS
Engineering Applications (TBA)

The same continued.

Faculty of Engineering (continued)
ENGINEERING TRIPOS, PART IB

MICHAELMAS 2004

LENT 2005

EASTER 2005

Second year: for students intending to take Part IB in 2005

A detailed timetable will be displayed in the Department. Further details are also available on the Web at
<http://www.eng.cam.ac.uk/teaching/courses/syllabuses.html>).

Paper 1 (Mechanics)

MR A. L. JOHNSON *LTO*
 Dynamics (Sixteen lectures)

Paper 2 (Structures)

DR K. SEFFEN *LTO*
 Structures (Eight lectures)

The same continued. (Four lectures)
 DR J. LEES (Eight lectures) *LTO*

Paper 3 (Materials)

DR D. R. H. JONES, PROF. M. ASHBY AND PROF. I. HUTCHINGS
LTO
 Materials (Sixteen lectures)

Paper 4 (Thermofluid Mechanics)

DR R. S. CANT *LTO* (Fourteen lectures)
 DR T. P. HYNES (Two lectures)
 Thermofluid Mechanics

DR T. P. HYNES
 The same continued. (Ten lectures)

Paper 5 (Electrical Engineering)

DR R. MCMAHON *LTO*
 Linear Circuits and Devices (Ten lectures)

DR T. FLACK *LTO*
 Electrical Power (Ten lectures)
 DR T. COOMBS *LTO*
 E. M. Fields and Waves (Six lectures)

Paper 6 (Information Engineering)

DR G. VINNICOMBE *LTO*
 Linear Systems (Fourteen lectures)

DR J. LASENBY *LTO*
 Communications (Eight lectures)

Paper 7 (Mathematical Methods)

DR P. A. DAVIDSON *LTO*
 Vector Calculus (Fourteen lectures)
 DR T. P. HYNES *LTO*
 Linear Algebra (Eight lectures)

DR S. J. GODSILL *LTO*
 Signal and Data Analysis (Six lectures)
 DR J. P. LONGLEY *LTO*
 Signal and Data Analysis (Six lectures)

Paper 8 (Selected topics)

Example Classes (Eight classes)
 Laboratory (*to be arranged*)
 Engineering Applications (TBA)

DR M. KITSON
 Corporate Strategy (Eight lectures)
 The same continued.
 The same continued.
 The same continued.

(All fourteen lectures and two examples classes)

All lectures in LT1/LT2
 PROF. R. MAIR AND DR C. J. BURGoyNE
 Civil and Structural Engineering
 DR V. DESHPANDE, PROF. N. A. FLECK AND PROF.
 M. F. ASHBY
 Mechanics, Materials and Design
 PROF. A. HOPPER AND DR F. STAJANO
 Information Engineering
 PROF. J. ROBERTSON AND PROF. W. I. MILNE
 Electrical Engineering
 DR J. P. LONGLEY
 Aerothermal Engineering
 DR R. W. PRAGER
 Biomedical Engineering
 DR J. M. ALLWOOD
 Manufacturing, Management and Design

Faculty of Engineering (continued)

ENGINEERING TRIPOS, PART IIA

All lectures will be held in the ENGINEERING DEPARTMENT unless otherwise stated. A detailed timetable will be displayed in the department.

MICHAELMAS 2004

LENT 2005

EASTER 2005

3A1: Fluid mechanics I Leader Prof. W. N. Dawes	The same continued.	
3A3: Fluid mechanics II Leader Prof. H. P. Hodson	The same continued.	
3A5: Energy and power generation Leader Prof. J. B. Young	The same continued.	
3B1: Radio frequency electronics Leader Dr P. A. Robertson	3B2: Integrated digital electronics Leader Dr F. Udrea	
3B3: Switch-mode electronics Leader Prof. G. A. J. Amaratunga	3B4: Electric drive systems Leader Dr T. A. Coombs	
3B5: Semiconductor engineering Leader Dr A. Flewitt	3B6: Photonic technology Leader Prof. I. H. White	
3C1: Materials processing and design Leader Dr H. R. Shercliff	3C2: Materials process modelling and failure analysis Leader Dr H. R. Shercliff	
3C3: Machine design - tribology Leader Dr J. A. Williams	3C4: Machine design - transmissions Leader Dr D. J. Cole	
3C5: Dynamics Leader Dr H. E. M. Hunt	3C6: Vibration Leader Dr D. Cebon	
3C7: Mechanics of solids Leader Dr T. J. Lu	3D7: Finite element methods Leader Dr K. Soga	
3D1: Soil mechanics Leader Prof. M. D. Bolton	3D2: Geotechnical engineering Leader Dr K. Soga	
3D3: Structural materials and design Leader Dr J. M. Lees	3D4: Structural analysis and stability Leader Mr F. A. McRobie	
3D5: Environmental engineering I Leader Mr F. A. McRobie	3D6: Environmental engineering II Leader Dr S. P. G. Madabhushi	
3E1: Business economics Leader Dr P. Kattuman	3E2: Marketing Leader Dr S. Bell	
3E3: Modelling risk Leader Dr H. Jiang	3E4: Modelling choice Leader Dr D. Ralph	
3E5: Human resource management Leader Mr C. G. Gill	3E6: Organisational behavior and change Leader Dr C. Grey	
3F1: Signals and systems Leader Dr N. G. Kingsbury	3F2: Systems and control Leader Dr J. M. Maciejowski	
3F4: Data transmission Leader Dr I. Wassell	3F3: Signal and pattern processing Leader Dr S. J. Godsill	
3F5: Computer and network systems Leader Dr F. M. Stajano	3F6: Software engineering and design Leader Dr T. W. Drummond	
3I1: Data structures and algorithms Leader Prof. A. Hopper	3M2: Physiological systems Leader Dr R. Saumarez	
3M1: Introduction to bioscience Leader Dr J. Archer	4A1: Nuclear power engineering Leader Dr G. T. Parks	
4C4: Design methods Leader Dr P. J. Clarkson	4C14: Mechanics of biological systems Leader Prof. N. A. Fleck	
4D1: Petroleum engineering Leader Prof. A. C. Palmer	4D11: Building physics Leader Dr C. T. Morley	
4D16: Construction and management Leader Dr C. T. Morley	4M12: PDEs and variational methods Leader Prof. J. Woodhouse	
4E6: Accounting and finance Leader Dr R. Chatterjee		
4M13: Complex analysis and optimization Leader: Dr G. T. Parks		

For all students:
Laboratory/coursework W. F. 11-1, 2.15-4.15

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Faculty of Engineering (continued)
ENGINEERING TRIPOS, PART IIb

MICHAELMAS 2004

LENT 2005

EASTER 2005

GROUP A: Energy, Fluid Mechanics and Turbomachinery

4A2 (Computational fluid mechanics)
 PROF. W. N. DAWES (Leader)

4A3 (Turbomachinery I)
 PROF. J. D. DENTON (Leader)

4A4 (Aircraft stability and control)
 DR W. R. GRAHAM (Leader)

4A5: Internal combustion engines
 PROF. N. COLLINGS (Leader)

4A6 (Flow induced sound and vibration)
 PROF. A. P. DOWLING (Leader)

4A8 (Environmental fluid mechanics)
 DR E. MASTORAKOS (Leader)

GROUP B: Electrical Engineering

4B5 (Nanotechnology)
 DR C. DURKAN (Leader)

4B8 (Electronic system design)
 DR D. DUKIC (Leader)

4B11 (Photonic systems)
 DR T. D. WILKINSON (Leader)

4B14: Solar-electronic power: generation and distribution
 PROF. G. AMARATUNGA (Leader)

4B17 Photonics of molecular materials
 PROF. H. COLES (Leader)

GROUP C: Mechanics, Materials and Design

4C2 Designing with composites
 DR M. P. F. SUTCLIFFE (Leader)

4C3 Electrical and nano materials
 PROF. D. A. CARDWELL (Leader)

4C4 Design methods
 DR P. J. CLARKSON (Leader)

4C6 Advanced linear vibration
 PROF. J. WOODHOUSE (Leader)

4C7 Random and non-linear vibration
 DR D. CEBON (Leader)

4C9 Continuum mechanics
 DR J. A. WILLIAMS (Leader)

GROUP D: Civil, Structural and Environmental Engineering

4D1 (Petroleum engineering)
 PROF. A. C. PALMER (Leader)

4D2 (Lightweight structures)
 DR K. A. SEFFEN (Leader)

4D7 (Concrete and masonry structures)
 DR C. T. MORLEY (Leader)

4D8 (Prestressed concrete)
 DR C. J. BURGOYNE (Leader)

4A1 (Nuclear power engineering)
 DR G. T. PARKS (Leader)

4A7 (Aerodynamics)
 PROF. H. BABINSKY (Leader)

4A10 (Flow instability)
 PROF. A. P. DOWLING (Leader)

4A11 (Turbomachinery II)
 DR I. HUNTSMAN (Leader)

4A12 (Turbulence)
 DR P. A. DAVIDSON (Leader)

4B2 (Power electronics and applications)
 DR F. UDREA (Leader)

4B6 (Solid state devices and chemical/biological sensors)
 DR D. F. MOORE (Leader)

4B7 (VLSI design, technology and CAD)
 DR D. M. HOLBURN (Leader)

4B10 (Optoelectronic technology)
 PROF. I. H. WHITE (Leader)

4B13 (Electronic sensors and instrumentation)
 DR P. A. ROBERTSON (Leader)

4B15 (Advanced telecommunication networks)
 DR T. WILKINSON (Leader)

4B18 Advanced electronic devices
 PROF. M. KELLY (Leader)

4C1 Design against failure
 DR V. DESHPANDE (Leader)

4C5 Design case studies
 TBA (Leader)

4C8 Applications of Dynamics
 DR D. CEBON (Leader)

4C12 Wave propagation
 PROF. W. J. STRONGE (Leader)

4C14 Mechanics of biological systems
 PROF. N. A. FLECK (Leader)

4C15 MEMS: design
 DR A. SESHIA (Leader)

4D4 (Ground engineering)
 PROF. R. J. MAIR (Leader)

4D5 (Foundation engineering)
 DR D. J. WHITE (Leader)

4D6 (Dynamics in civil engineering)
 MR S. P. G. MADABHUSHI (Leader)

4D8 (Prestressed concrete)
 DR C. J. BURGOYNE (Leader)

Faculty of Engineering (continued)

ENGINEERING TRIPOS, PART IIB (continued)

MICHAELMAS 2004

LENT 2005

EASTER 2005

4D10 (Structural steelwork)
DR K. A. SEFFEN (Leader)

4D12 (Coastal and off-shore engineering)
DR J. F. A. SLEATH (Leader)

4D14 (Contaminated land and waste containment)
DR K. SOGA (Leader)

4D16 (Construction and management)
DR C. T. MORLEY (Leader)

GROUP E: Management and Manufacturing

4E1 (Technological innovation: research and practice)
DR E. W. GARNSEY (Leader)

4E3 (Information systems)
DR M. R. JONES (Leader)

4E4 (Management of technology)
DR T. MINSHALL (Leader)

4E6 (Accounting and finance)
DR R. CHATTERJEE (Leader)

4E8 (Design and management of manufacturing systems)
DR M. HOLWEG (Leader)

GROUP F: Information Engineering

4F1 (Control system design)
PROF. M. C. SMITH (Leader)

4F3 (Nonlinear and predictive control)
DR J. M. MACIEJOWSKI (Leader)

4F7 (Digital filters and spectrum estimation)
DR S. J. GODSILL (Leader)

4F8 (Image processing and image coding)
DR N. G. KINGSBURY (Leader)

4F10 (Statistical pattern processing)
DR M. J. F. GALES (Leader)

4F11 (Speech processing)
PROF. P. WOODLAND (Leader)

4F12 (Computer vision and robotics)
PROF. R. CIPOLLA (Leader)

GROUP I: Imported Modules

4I1 (Real options for engineering systems)
PROF. S. SCHOLTES (Leader)

4I3 (Distribution networks: economics, market structures
and strategies)
DR M. POLLITT (Leader)

GROUP M: Multidisciplinary Modules

4M6 (Materials and processes for microsystems (MEMS))
DR A. FLEWITT (Leader)

4M13 (Complex analysis and optimisation)
DR G. T. PARKS (Leader)

4M14 (Sustainable development)
DR R. FENNER (Leader)

GROUP R: Research modules (open to certain undergraduates)

5R5 (Advanced experimental methods in geomechanics)
Leader: Prof. M. D. Bolton

4D11 (Building physics)
DR C. T. MORLEY (Leader)

4D15 (Sustainable water engineering)
DR R. FENNER (Leader)

4E5 (International business economics)
DR J. ZHANG (Leader)

4E7 (Enterprise and business development)
DR E. GARNSEY (Leader)

4E9 (Quantitative techniques in operations
management)
DR R. STEINBERG (Leader)

4E11 (Strategic management)
DR Z. ZYGLIDOPOULOS (Leader)

4F2 (Robust multivariable control)
DR G. VINNICOMBE (Leader)

4F5 (Digital communication)
PROF. A. HOPPER (Leader)

4F6 (Signal detection and estimation)
PROF. W. J. FITZGERALD (Leader)

4F9 (Medical imaging and 3D computer graphics)
DR A. H. GEE (Leader)

4M1 (French)
MR C. D'ANGELO (Leader)

4M2 (German)
MR M. ROHDE (Leader)

4M3 (Spanish)
MR S. BIANCHI (Leader)

4M8 Bioinformatics
DR K. JOHNSTONE (Leader)

4M12 (PDEs and variational methods)
PROF. J. WOODHOUSE (Leader)

5R1 (Stochastic processes and optimisation
methods)
Leader: Dr G. T. Parks

5R11 (Applications in MEMS)
Leader: Dr J. A. Williams

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Faculty of Engineering (continued)**MANUFACTURING ENGINEERING TRIPOS, PART I**

MICHAELMAS 2004

LENT 2005

EASTER 2005

(A detailed timetable will be displayed in the Department)

*Lectures in Mill Lane and in the Engineering Department***Paper P1 (Design and Manufacture)**

Leader: Dr K. W. Platts

The same continued.

Paper P2 (Organisation and Control of Manufacturing Systems)

Leader: Dr M. R. Jones/Dr J. Allwood

The same continued.

Paper P3 (Management Economics and Accounting)

Leader: Mr P. Guest

The same continued.

Paper P4 (Engineering Materials and Processing)

Leader: Dr C. Y. Barlow

The same as Engineering Tripos, Part IIA, s 3C1 and 3C2

The same continued.

Paper P5

Leader: Mr C. Gill

DR C. GREY

The same continued.

Factory Visits. Workshops. Tu. all day
Laboratory/Projects (to be arranged)