

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 2003

LENT 2004

EASTER 2004

PART IA

First year: for students intending to take Part IA in 2004

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)

PROF. S. PELLEGRINO *LT0*
Structural Mechanics (Twelve lectures)
DR D. A. CARDWELL *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)

PROF. G. AMARATUNGA *LT0*
The same continued. (Two lectures)
DR F. UDREA *LT0*
The same continued. (Four lectures)

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

DR R. W. PRAGER *LT1*
Digital Circuits (Sixteen lectures) } in parallel
DR R. V. PENTY *LT2*
Digital Circuits (Sixteen lectures) }

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

Paper 4 (Mathematics)

DR W. R. GRAHAM (Twelve lectures)
DR A. WHITE (Twelve lectures) *LT2*
DR P. WOLFE (Sixteen lectures) *LT1*

PROF. J. WOODHOUSE *LT0* (Nine lectures)

PROF. N. COLLINGS AND DR P. LONG *LT1*
Drawing and Design (Eight lectures)

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

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

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

Computing (Four lectures)

The same continued. (Four lectures)

DR M. P. F. SUTCLIFFE AND OTHERS
Laboratory

The same continued.
Laboratory Signing (to be arranged)
Structural Design Tests (to be arranged)

The same continued.

DR P. J. LONG AND OTHERS
Engineering Applications (Five lectures)
Examples Classes (Eight classes)

The same continued. (Three lectures)
The same continued. (Eight classes)

The same continued. (To be arranged)

Faculty of Engineering (continued)
ENGINEERING TRIPOS, PART IB

MICHAELMAS 2003

LENT 2004

EASTER 2004

Second year: for students intending to take Part IB in 2004

(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)**Paper 2 (Structures)**

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

Paper 3 (Materials)

DR H. R. SHERCLIFF AND PROF. I. HUTCHINGS *LTO*
Materials (Sixteen lectures)

Paper 4 (Thermofluid Mechanics)

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

Paper 5 (Electrical Engineering)

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

Paper 6 (Information Engineering)

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

Paper 7 (Mathematical Methods)

DR P. A. DAVIDSON *LTO*
Vector Calculus (Fourteen lectures)
PROF. S. PELLEGRINO *LTO*
Linear Algebra (Eight lectures)

Paper 8 (Selected topics)

Example Classes (Eight classes)
DR R. A. MCMAHON AND OTHERS
Laboratory (to be arranged)
DR P. J. LONG AND OTHERS
Engineering Applications (Four lectures)
DR P. A. SMITH
Matlab practical classes

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

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

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

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

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

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

DR M. KITSON
Corporate Strategy (Eight lectures)
DR R. W. PRAGER AND OTHERS
Computing Practical Classes
The same continued.

The same continued.

The same continued. (Four lectures)

(All fourteen lectures and two examples classes)

All lectures in LT1/LT2
PROF. R. MAIR AND DR C. R. MIDDLETON
Civil and Structural Engineering
DR V. DESHPANDE
Mechanical Engineering, Manufacture and
Management
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 A. H. GEE
Biomedical Engineering

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 2003

LENT 2004

EASTER 2004

3A1: Fluid mechanics I Leader TBA	The same continued.	
3A3: Fluid mechanics II Leader Prof. J. D. Denton	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 Dr P. R. Palmer	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: Solid mechanics Leader Dr T. J. Lu	3D7: Continuum mechanics numerical methods Leader Dr J. M. Allwood	
3D1: Soil mechanics Leader Prof. M. D. Bolton	3D2: Geotechnical engineering Leader Dr J. R. Standing	
3D3: Structural materials and design Leader Dr J. M. Lees	3D4: Structural analysis and stability Leader Dr C. J. Burgoyne	
3D5: Environmental engineering I Leader Dr J. F. A. Sleath	3D6: Environmental engineering II Leader Dr A. Al-Tabbaa	
3E3: Modelling choice Leader Dr D. Ralph	3E2: Marketing Leader Prof. N. Phillips	
3E5: Human resource management Leader Mr C. G. Gill	3E4: Modelling risk TBA	
3E7: Microeconomics Leader Dr P. Kattuman	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: Natural and micro-architected materials Leader Prof. N. A. Fleck	
4D1: Petroleum engineering Leader Prof. A. C. Palmer	4D13: Architectural engineering Leader Dr K. Shea	
4E6: Accounting and finance Leader Dr R. Chatterjee	4E13: Macroeconomics Leader Dr M. Kitson	
4M13: Complex analysis and optimization Leader Prof. N. A. Fleck	4M12: PDEs and variational methods Leader Prof. R. S. Langley	

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 2003

LENT 2004

EASTER 2004

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)

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

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

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

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

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

GROUP C: Mechanics, Materials and Design

4C2 (Designing with composites)
 PROF. N. A. FLECK (Leader)

4C3 (Electrical materials)
 DR 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)
 PROF. R. S. LANGLEY (Leader)

4C9 (Continuum mechanics)
 PROF. W. J. STRONGE (Leader)

GROUP D: Civil, Structural and Environmental Engineering

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

4D2 (Lightweight structures)
 PROF. S. PELLEGRINO (Leader)

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

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

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

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

4A7 (Aerodynamics)
 PROF. W. N. DAWES (Leader)

4A9 (Molecular Thermodynamics)
 PROF. J. B. YOUNG (Leader)

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

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

4A12 (Turbulence)
 TBA (Leader)

4B2 (Power electronics and applications)
 DR P. R. PALMER (Leader)

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

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

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

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

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

4C1 (Design against failure)
 DR T. J. LU (Leader)

4C5 (Design case studies)
 DR K. SHEA (Leader)

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

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

4C14 (Natural and micro-architected materials)
 PROF. N. A. FLECK (Leader)

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

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

4D5 (Foundation engineering)
 TBA (Leader)

4D6 (Dynamics in civil engineering)
 MR F. A. MCROBIE (Leader)

4D8 (Prestressed concrete)
 DR C. T. MORLEY (Leader)

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

Faculty of Engineering (continued)

ENGINEERING TRIPOS, PART IIB (continued)

MICHAELMAS 2003

LENT 2004

EASTER 2004

4D12 (Coastal and off-shore engineering)

DR J. F. A. SLEATH (Leader)

4D14 (Contaminated land and waste containment)

DR K. SOGA (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)

GROUP F: Information Engineering**4F1** (Control system design)

PROF. M. C. SMITH (Leader)

4F7 (Digital filters and spectral 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**4I3** (Distribution networks: economics, market structures and strategies)

DR M. POLLITT (Leader)

4I5 (Introduction to technology and policy)

DR W. NUTTALL (Leader)

GROUP M: Multidisciplinary Modules**4M6** (Materials and processes for microsystems (MEMS))

DR A. FLEWITT (Leader)

4M13 (Complex analysis and optimisation)

PROF. N. A. FLECK (Leader)

4M14 (Sustainable development)

PROF. C. AINGER (Leader)

GROUP R: Research modules (open to certain undergraduates)**5R5** (Advanced experimental methods in geomechanics)

PROF. M. D. BOLTON (Leader)

4D13 (Architectural engineering)

DR K. SHEA (Leader)

4D15 (Sustainable water engineering)

DR R. FENNER (Leader)

4E5 (International business economics)

DR M. POLITT (Leader)

4E7 (Enterprise and business development)

DR E. GARNSEY (Leader)

4E11 (Strategic management)

PROF. N. PHILLIPS (Leader)

4E13 (Macroeconomics)

DR M. KITSON (Leader)

4F2 (Robust multivariable control)

DR G. VINNICOMBE (Leader)

4F3 (Nonlinear and predictive control)

DR J. M. MACIEJOWSKI (Leader)

4F5 (Digital communication)

PROF. A. HOPPER (Leader)

4F6 (Signal detection and estimation)

DR W. J. FITZGERALD (Leader)

4F9 (Medical imaging)

DR A. H. GEE (Leader)

4I1 (Real options for engineering systems)

DR S. SCHOLTES (Leader)

4I4 (The political economy of technology policy)

DR C. PITELIS (Leader)

4I7 (Key methods in technology policy)

DR W. NUTTALL (Leader)

4M1 (French)

MR C. D'ANGELO (Leader)

4M2 (German)

MR M. BROSCHKOWSKI (Leader)

4M12 (PDEs and variational methods)

PROF. R. S. LANGLEY (leader)

5R1 (Stochastic processes and optimisation methods)

DR G. T. PARKS (Leader)