Part IIB syllabuses; links to on-line resources

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Note that all modules are assessed by 100% Coursework, or 100% Examination, or 75% Examination and 25% Coursework. In all cases, the definitive form of assessment is given in the Faculty Board Notice.

Interactive booklists for Part IIB are available on Moodle.

Group A: Energy, Fluid Mechanics and Turbomachinery

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4A2	Computational fluid dynamics	M(1)	Coursework	3A1, 3A3		Lecture Notes	Prof. P.G. Tucker
4A3	Turbomachinery	M(7)	Exam and coursework	3A1, 3A3		Moodle	Dr N.R. Atkins
4A4	Aircraft stability and control	M(10) and L	Coursework			Moodle	Dr W.R. Graham
4A7	Aerodynamics	M(3)	Coursework	3A1, 3A3		Moodle	Dr J. Jarrett
4A9	Molecular thermodynamics (not running 2015-16)	M(6)	Exam		3A1, 3A5	Camtools Lecture Notes	Prof. J.B. Young
4A10	Flow instability	L(6)	Exam	3A1		Moodle	Prof. G. Hunt
4A12	Turbulence and vortex dynamics	L(3)	Exam	3A1	3A3	Lecture Notes	Prof. E. Mastorakos
4A13	Combustion and IC engines	L(5)	Exam		3A5, 3A6	Moodle Lecture Notes	Prof. N. Collings
4A15	Aeroacoustics (reintroduced 2015-16)	M(9)	Exam	3A1			Dr A Agarwal

Group B: Electrical Engineering

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4B2	Power microelectronics	M(8)	Exam			Moodle	Prof. F. Udrea
4B5	Nanotechnology	M(10)	Exam and Coursework		3B5, 3B6		Dr C. Durkan
4B6	Solid state devices and chemical/biological sensors	L(3)	Exam		3B5, 3B6		Prof. D. Chu
4B7	VLSI design, technology and CAD	L(1)	Exam and Coursework	3B1, 3B2, 3B5	3B3, 3B6	Moodle	Dr D. Holburn
4B11	Photonic systems	M(9)	Exam		3B6		Prof. T. Wilkinson
4B13	Electronic sensors and instrumentation	L(2)	Exam	3B1		Camtools	Dr P.A. Robertson
4B14	Solar-electronic power: generation and distribution	M(4)	Exam and Coursework		3B3, 3B6		Prof. G. Amaratunga
4B19	Renewable electrical power	M(2)	Exam		3B4	Moodle	Dr R. McMahon
4B20	Display technology	L(6)	Exam		4B5, 4B6	Moodle	Prof. T. Wilkinson
4B21	Analogue integrated circuits	M(3)	Exam	3B1, 3B2, 3B5	3B3, 3B6		Prof. A. Nathan

Group C: Mechanics, Materials and Design

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4C2	Designing with composites	M(5)	Exam and Coursework			Moodle	Dr M. Sutcliffe
4C3	Electrical and nano materials	M(6)	Exam			Moodle	Dr S. Hofmann
4C4	Design methods	M(2)	Exam				Dr J. Cullen
4C5	Design case studies	L(4)	Coursework		4C4	Moodle	Dr P Kristensson
4C6	Advanced linear vibrations	M(4)	Exam and Coursework	3C6		Moodle	Prof. J. Woodhouse
4C7	Random and non-linear vibrations	M(8)	Exam and Coursework		3C6	Moodle	Prof. R. Langley
4C8	Applications of dynamics	L(1)	Exam and Coursework		3C5, 3C6	Moodle	Dr D.J. Cole
4C9	Continuum mechanics	M(7)	Exam	3C7	3D7	Moodle	Prof. N. Fleck
4C15	MEMS: design (not running 2015-16)	L(6)	Exam and Coursework		4M6	Moodle	Dr A. Seshia
4C16	Advanced machine design	L(9)	Exam and Coursework		3C8	Moodle	Dr D. Symons

Group D: Civil, Structural and Environmental Engineering

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4D4	Construction engineering	L(8)	Coursework		3D1, 3D2, 4D16	Moodle	Prof. A. Mair
4D5	Foundation engineering	L(5)	Exam and Coursework	3D2		Moodle	Dr G. Biscontin
4D6	Dynamics in civil engineering	L(2)	Exam and Coursework	3D7	3D2, 3D4	Moodle	Prof. G. Madabhushi
4D7	Concrete structures	L(11)	Exam and Coursework	3D3			Prof. C. Middleton
4D8	Pre-stressed Concrete (reintroduced 2015-16)	L(11)	Exam		3D3, 3D4	Moodle Lecture Notes	Prof C J Burgoyne
4D10	Structural steelwork	M(5)	Exam and Coursework	3D4	3D3	Camtools	Mr F.A. McRobie
4D13	Architectural engineering	M(12)	Coursework		3D3, 3D4		Mr F.A. McRobie
4D14	Contaminated land and waste containment	M(1)	Exam and Coursework		3D8	Moodle	Prof. A. Al-Tabbaa
4D15	Sustainable water engineering	L(4)	Coursework		3D5, 3D8	Moodle	Dr R. Fenner
4D16	Construction management (not running 2015-16)	M(9)	Exam				Dr I. Brilakis
4D17	Plate and shell structures	M(3)	Coursework				Dr K.A. Seffen

Group E: Management and Manufacturing

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4E3	Information systems	M(15)	Coursework			Moodle	Ms S Pachidi
4E4	Management of technology	M(17)	Coursework			Moodle	Dr T. Minshall
4E5	International business economics	L(12)	Coursework				Dr J.J. Kroezen
4E6	Accounting and finance	M(16)	Coursework			Moodle	Dr O. Cole
4E11	Strategic management	L(13)	Coursework			Moodle	Dr S. Ansari
4E12	Project management	L(14)	Coursework			Moodle	Dr N. Oraiopoulos

Group F: Information Engineering

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4F1	Control system design	M(6)	Exam and Coursework		3F1, 3F2		Prof. M. Smith
4F2	Robust and nonlinear systems and control	L(9)	Exam	3F2			Prof. R. Sepulchre
4F3	Optimal and predictive control	L(2)	Exam		3F1, 3F2	Moodle	Prof J.M. Maciejowski
4F5	Advanced communications and coding	M(7)	Exam	3F1	3F4	Moodle	Dr R. Venkataramanan
4F7	Digital filters and spectrum estimation	M(8)	Exam	3F1, 3F3			Prof S.J. Godsill
4F8	Image processing and image coding	L(3)	Exam	3F1	3F3, 4F7	Moodle	Prof. N. Kingsbury
4F10	Statistical pattern processing	M(9)	Exam		3F1, 3F3		Prof. M.J. Gales
4F11	Speech and language processing	L(1)	Exam		3F1, 3F3	Moodle	Prof. P. Woodland
4F12	Computer vision and robotics	M(2)	Exam				Prof. R. Cipolla
4F13	Machine learning	M(11)	Coursework		3F3	Machine learning lecture notes	Prof. Z. Ghahramani

Group G: Bioengineering

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4G1	Mathematical biology of the cell	L(6)	Coursework			Moodle	Dr T. Savin
4G2	Biosensors (not running 2015-16)	L(5)	Coursework			Moodle	Dr A. Seshia
4G3	Computational neuroscience	L(4)	Coursework		3G2, 3G3	Moodle	Dr M. Lengyel
4G4	Biomimetics	L(7)	Coursework			Moodle	Dr M L Oyen
4G5	Molecular modelling	M(14)	Coursework			Moodle	Dr G. Csanyi
4G6	Cellular and molecular biomechanics	M(10)	Exam		3C7	Camtools	Dr V. Deshpande

Group I: Imported Modules

Note that these modules are all imported from other courses, and hence might be timetabled at unusual times and in unusual places, and have a different course structure to other IIB modules. Also, many of them have a cap on numbers. However, they do provide a tremendous opportunity to learn about a wider range of technology than the Engineering Tripos would otherwise provide.

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4I1	Strategic valuation	M(18)	Coursework			Moodle	Dr H. Jiang
4I5	Nuclear materials (not running 2015-16)	L(16)	Exam				Dr J. Gwynne
4I7	Electricity and environment	L(7)	Coursework				Dr M Pollitt
4I8	Medical physics	L(10)	Exam		3G4	Moodle	Dr M. Lengye
4I9	Low power embedded systems programming (not running 2015-16)	M(19)	Coursework				Dr I Wassell
4I10	Nuclear reactor engineering	M(13)	Exam	4M16		Moodle	Dr E. Shwage
4I11	Advanced fission and fusion systems	L(10)	Exam	4M16		Camtools	Dr E. Shwage
4I12	Social and technological network analysis (not running 2015-16)	L(17)	Coursework				Dr C. Mascolo
4I13	Flow of networks (not running 2015-16)	L(18)	Coursework				Dr R. Gibbens

Group M: Multidisciplinary Modules

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4M1	French	L(15)	Coursework			Moodle	Mr D. Tual
4M2	German (not running 2015-16)		Coursework				Mr M Kantus
4M3	Spanish (not running 2015-16)	M(11)	Coursework				Mr S. Bianchi
4M4	Japanese (not running 2015-16)		Coursework				Dr M Ashikari
4M6	Materials and processes for microsystems (MEMS) (not running 2015-16)	M(1)	Exam and Coursework			Moodle	Prof A.J. Flewitt
4M9	Surveying field course	long vac	Coursework				Mr A.L. Johnson
4M12	Partial differential equations and variational methods	L(11)	Exam			Moodle	Prof. P. Davidson
4M14	Sustainable development	M(13)	Coursework			Moodle	Prof P. Guthrie
4M15	Sustainable energy	L(8)	Exam and Coursework		3A5		Dr S. Scott
4M16	Nuclear power engineering	L(11)	Exam			Moodle	Dr G.T. Parks
4M17	Practical optimization	M(14)	Coursework	3M1		Camtools	Dr G. Csanyi
4M18	Present and future energy systems	M(5)	Exam			Camtools	Prof. M.J. Kelly

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4M19	Advanced building physics	M(14)	Coursework	3D8		Moodle	Dr M. Overend
4M20	Robotics	M(12)	Coursework		3C5, 3C8, 3F2, 3F3	Moodle	Dr F Iida

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