

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
Cod e	Title (linked to syllabus)			Assumed	Useful		
4A2	Computational fluid dynamics	M(1)	Coursework	3A1, 3A3		Moodle	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	M(6)	Exam		3A1, 3A5	Moodle	Dr A. J. White
4A10	Flow instability	L(6)	Exam	3A1		Moodle	Prof. G. Hunt
4A12	Turbulence and vortex dynamics	L(3)	Exam	3A1	3A3	Moodle	Prof. P. Davidson
4A13	Combustion and IC engines	L(5)	Exam		3A5, 3A6	Moodle	Prof. S. Hochgreb
4A15	Aeroacoustics	M(9)	Exam	3A1		Moodle	Dr A Agarwal

[Group B: Electrical Engineering](#)

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	Title (linked to syllabus)			Assumed	Useful		
4B2	Power microelectronics	M(9)	Exam			Moodle	Prof. F. Udrea
4B5	Nanotechnology	M(10)	Exam and Coursework		3B5, 3B6	Moodle	Dr C. Durkan

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Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	Title (linked to syllabus)			Assumed	Useful		
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(8)	Exam		3B6	Moodle	Prof. T. Wilkinson
4B19	Renewable electrical power	M(2)	Exam		3B4	Moodle	Dr T. Flack
4B20	Display technology	L(6)	Exam		4B5, 4B6	Moodle	Prof. T. Wilkinson
4B21	Analogue integrated circuits	M(3)	Exam	3B1, 3B2, 3B5	3B3, 3B6	Moodle	Prof. A. Nathan
4B22	Flexible Electronics	L(5)	Exam		4B5, 3B5	Moodle	Dr F. Torrisi

[Group C: Mechanics, Materials and Design](#)

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	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			Moodle	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	Vehicle Dynamics	L(1)	Exam and Coursework		3C5, 3C6	Moodle	Dr D.J. Cole
4C9	Continuum mechanics	M(7)	Exam	3C7	3D7	Moodle	Dr G. McShane
4C15	MEMS: design	L(7)	Exam and Coursework		4M6	Moodle	Prof A. Seshia

[Group D: Civil, Structural and Environmental Engineering](#)

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Module Code	Title (linked to syllabus)	Term (set)	Form of assessment	Prerequisites Assumed	Useful	On-line resources	Leader
4D4	Construction engineering	L(1)	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(10)	Exam and Coursework	3D3		Moodle	Prof. C. Middleton
4D8	Pre-stressed Concrete (not running 2016-17)	L(11)	Exam		3D3, 3D4	Moodle	Prof C J Burgoyne
4D10	Structural steelwork	M(5)	Exam and Coursework	3D4	3D3	Moodle	Prof S D Guest
Module Code	Title (linked to syllabus)	Term (set)	Form of assessment	Prerequisites Assumed	Useful	On-line resources	Leader
4D15	Sustainable water engineering	L(4)	Coursework		3D5, 3D8	Moodle	Dr R. Fenner
4D16	Construction management (reintroduced 2016-17)	M(9)	Exam			Moodle	Dr I. Brilakis
4D17	Plate and shell structures	M(3)	Coursework			Moodle	Dr K.A. Seffen

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[Group E: Management and Manufacturing](#)

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

[Group F: Information Engineering](#)

Module Code	Title (linked to syllabus)	Term (set)	Form of assessment	Prerequisites Assumed	Useful	On-line resources	Leader
4F1	Control system design	M(6)	Exam and Coursework		3F1, 3F2		Prof. M. Smith

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Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	Title (linked to syllabus)			Assumed	Useful		
4F2	Robust and nonlinear systems and control	L(9)	Exam	3F2		Moodle	Prof. R. Sepulchre
4F3	Optimal and predictive control	L(2)	Exam		3F1, 3F2	Moodle	Dr I Lestas
4F5	Advanced communications and coding	M(7)	Exam	3F1	3F4	Moodle	Dr J. Sayir
4F7	Digital filters and spectrum estimation	M(8)	Exam	3F1, 3F3			Dr S. Singh
4F8	Image processing and image coding	L(3)	Exam	3F1	3F3, 3F7	Moodle	Prof. N. Kingsbury
4F10	Statistical pattern processing	M(9)	Exam		3F1, 3F3	Moodle	Prof. M.J. Gales
4F12	Computer vision	M(2)	Exam			Moodle	Prof. R. Cipolla
4F13	Probabilistic Machine Learning	M(11)	Coursework		3F3	Machine learning lecture notes	Prof C. Rasmussen

[Group G: Bioengineering](#)

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	Title (linked to syllabus)			Assumed	Useful		
4G1	Mathematical biology of the cell	L(6)	Coursework			Moodle	Dr T. Savin
4G2	Biosensors	L(2)	Coursework			Moodle	Prof A. Seshia
4G3	Computational neuroscience	L(4)	Coursework		3G2, 3G3	Moodle	Dr S. Eglen
4G4	Biomimetics	L(7)	Coursework			Moodle	Dr M L Oyen

[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
Cod e	Title (linked to syllabus)			Assumed	Useful		
4I1	Strategic valuation	M(18)	Coursework			Moodle	Dr H. Jiang
4I7	Electricity and environment	L(7)	Coursework			Moodle	Dr M Pollitt
4I8	Medical physics	L(10)	Exam		3G4	Moodle	Dr G Treece
4I10	Nuclear reactor engineering	M(13)	Exam	4M16		Moodle	Dr E. Shwagerl
4I11	Advanced fission and fusion systems	L(10)	Exam	4M16		Moodle	Dr E. Shwagerl

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Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader		
Cod e	Title (linked to syllabus)			Assumed	Useful				
4I12	Social and technological network data analytics	L(17)	Coursework						Dr C. Mascolo

[Group M: Multidisciplinary Modules](#)

French (not running 2016-17) German (not running 2016-17)--> Japanese (not running 2016-17)-->

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Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader		
Cod e	Title (linked to syllabus)			Assumed	Useful				
4M3	Spanish	M(11)	Coursework			Moodle	Mr S. Bianchi		
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	Dr C. Barlow		
4M15	Sustainable energy	L(8)	Exam and Coursework		3A5	Moodle	Dr S. Scott		
4M16	Nuclear power engineering	L(11)	Exam			Moodle	Dr G.T. Parks		
4M17	Practical optimization	M(19)	Coursework	3M1		Moodle	Prof R. Sepulchre		
4M18	Present and future energy systems	M(5)	Exam			Moodle	Dr P. Palmer		
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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