

## 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's [Modules & Sets](#) document. The Faculty Board also publish an [outline of the coursework requirements for Part IIB 100% coursework modules](#) but you should see the module syllabus pages for further details.

[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	<a href="#">Computational fluid dynamics</a>	M(1)	Coursework	3A1, 3A3		<a href="#">Moodle</a>	<a href="#">Dr T.P. Hynes</a>
4A3	<a href="#">Turbomachinery</a>	M(4)	Exam and coursework	3A1, 3A3		<a href="#">Moodle</a>	<a href="#">Dr N.R. Atkins</a>
4A7	<a href="#">Aerodynamics</a>	M(8)	Coursework	3A1, 3A3		<a href="#">Moodle</a>	<a href="#">Dr J. Jarrett</a>
4A9	<a href="#">Molecular thermodynamics</a>	M(7)	Exam		3A1, 3A5	<a href="#">Moodle</a>	<a href="#">Dr A. J. White</a>
4A10	<a href="#">Flow instability</a>	L(11)	Exam	3A1		<a href="#">Moodle</a>	<a href="#">Prof. G. Hunt</a>
4A12	<a href="#">Turbulence and vortex dynamics</a>	L(3)	Exam	3A1	3A3	<a href="#">Moodle</a>	<a href="#">Prof. P. Davidson</a>
4A13	<a href="#">Combustion and IC engines</a>	L(5)	Exam		3A5, 3A6	<a href="#">Moodle</a>	<a href="#">Prof N Swaminathan</a>
4A15	<a href="#">Aeroacoustics</a>	M(6)	Exam	3A1		<a href="#">Moodle</a>	<a href="#">Dr A Agarwal</a>

### [Group B: Electrical Engineering](#)

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4B2	<a href="#">Power microelectronics</a>	M(6)	Exam		3B3, 3B5	<a href="#">Moodle</a>	<a href="#">Prof. F. Udrea</a>
4B11	<a href="#">Photonic systems</a>	M(5)	Exam		3B6	<a href="#">Moodle</a>	<a href="#">Prof. T. Wilkinson</a>
4B13	<a href="#">Electronic sensors and instrumentation</a>	L(1)	Exam	3B1		<a href="#">Moodle</a>	<a href="#">Dr P A Robertson</a>
4B19	<a href="#">Renewable electrical power</a>	M(2)	Exam	3B3, 3B4, 3B6		<a href="#">Moodle</a>	<a href="#">Dr T. Flack</a>

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Module		Term m (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4B21	<a href="#">Analogue integrated circuits</a>	M(3)	Exam	3B1, 3B2, 3B5	3B3, 3B6	<a href="#">Moodle</a>	<a href="#">Dr S Sambandan</a>
4B22	<a href="#">Flexible and Stretchable Electronics</a>	L(5)	Exam		3B5, 4B5	<a href="#">Moodle</a>	<a href="#">Dr F Torrisi</a>
4B23	<a href="#">Optical Fibre Communication</a>	L(2)	Exam and coursework		3B6, 3F4	<a href="#">Moodle</a>	<a href="#">Dr S J Savory</a>
4B24	<a href="#">Radio frequency systems</a>	L(4)	Exam and coursework	3B1		<a href="#">Moodle</a>	<a href="#">Dr M J Crisp</a>
4B25	<a href="#">Embedded systems for the internet of things</a>	M(7)	Coursework		3B2	<a href="#">Moodle</a>	<a href="#">Dr P Stanley-Marbell</a>

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

Module		Term m (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4C2	<a href="#">Designing with composites</a>	M(3)	Exam and Coursework			<a href="#">Moodle</a>	<a href="#">Prof M.P.F. Sutcliffe</a>
4C3	<a href="#">Advanced Functional Materials and Devices</a>	M(8)	Exam			<a href="#">Moodle</a>	<a href="#">Dr J H Durrell</a>
4C4	<a href="#">Design methods</a>	M(2)	Exam			<a href="#">Moodle</a>	<a href="#">Dr P O Kristensson</a>
4C5	<a href="#">Design case studies</a>	L(4)	Coursework		4C4	<a href="#">Moodle</a>	<a href="#">Dr P Kristensson</a>
4C6	<a href="#">Advanced linear vibrations</a>	M(4)	Exam and Coursework	3C6		<a href="#">Moodle</a>	<a href="#">Dr H.E.M. Hunt</a>
4C7	<a href="#">Random and non-linear vibrations</a>	M(5)	Exam and Coursework		3C6	<a href="#">Moodle</a>	<a href="#">Prof. R. Langley</a>
4C8	<a href="#">Vehicle Dynamics</a>	L(8)	Exam and Coursework		3C5, 3C6	<a href="#">Moodle</a>	<a href="#">Prof D Cebon</a>
4C9	<a href="#">Continuum mechanics</a>	L(7)	Exam	3C7	3D7	<a href="#">Moodle</a>	<a href="#">Dr G McShane</a>
4C15	<a href="#">MEMS: design</a>	L(2)	Exam and Coursework			<a href="#">Moodle</a>	<a href="#">Prof A. Seshia</a>

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

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Module		Term m (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4D4	<a href="#">Construction engineering</a>	L(4)	Coursework		3D1, 3D2, 4D16	<a href="#">Moodle</a>	<a href="#">Prof G Viggiani</a>
4D5	<a href="#">Foundation engineering</a>	L(5)	Exam	3D2		<a href="#">Moodle</a>	<a href="#">Dr G. Biscontin</a>
4D6	<a href="#">Dynamics in civil engineering</a>	L(2)	Exam and Coursework		3D2, 3D4, 3D7	<a href="#">Moodle</a>	<a href="#">Prof. G. Madabhushi</a>
4D7	<a href="#">Concrete structures</a>	M(4)	Exam and Coursework	3D3		<a href="#">Moodle</a>	<a href="#">Prof. C. Middleton</a>
4D10	<a href="#">Structural steelwork</a>	M(3)	Exam and Coursework	3D4	3D3	<a href="#">Moodle</a>	<a href="#">Prof. F A McRobie</a>
4D13	<a href="#">Architectural engineering</a>	M(8)	Coursework		3D3, 3D4, 3D8	<a href="#">Moodle</a>	<a href="#">Dr R Choudhary</a>

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Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4D14	<a href="#">Contaminated land and waste containment</a>	L(3)	Exam and Coursework		3D8	<a href="#">Moodle</a>	<a href="#">Prof A Al-Tabbaa</a>
4D16	<a href="#">Construction management (reintroduced 2018-19)</a>	L(1)	Exam			<a href="#">Moodle</a>	<a href="#">Dr P Heffernan</a>

### Group E: Management and Manufacturing

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4E1	<a href="#">Innovation and strategic management of intellectual property</a>	M(9)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr F Tietze</a>
4E4	<a href="#">Management of technology</a>	M(9)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr T. Minshall</a>
4E5	<a href="#">International Business</a>	L(9)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr J.J. Kroezen</a>
4E6	<a href="#">Accounting and finance</a>	M(9)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr O. Cole</a>
4E11	<a href="#">Strategic management</a>	L(12)	Coursework			<a href="#">Moodle</a>	<a href="#">Prof S Ansari</a>
4E12	<a href="#">Project management</a>	L(9)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr N. Oraiopoulos</a>

### Group F: Information Engineering

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4F1	<a href="#">Control system design</a>	M(5)	Exam and Coursework		3F1, 3F2		<a href="#">Prof M.C. Smith</a>
4F2	<a href="#">Robust and nonlinear systems and control</a>	L(7)	Exam	3F2		<a href="#">Moodle</a>	<a href="#">Prof M.C. Smith</a>
4F3	<a href="#">An optimisation based approach to control</a>	L(11)	Exam		3F1, 3F2	<a href="#">Moodle</a>	<a href="#">Dr G Vinnicombe</a>
4F5	<a href="#">Advanced information theory and coding</a>	L(6)	Exam	3F7	3F1, 3F4	<a href="#">Moodle</a>	<a href="#">Dr J. Sayir</a>
4F7	<a href="#">Statistical signal analysis</a>	L(8)	Exam	3F3	3F1, 3F8		<a href="#">Dr S. Singh</a>
4F8	<a href="#">Image processing and image coding</a>	L(3)	Exam	3F1	3F3, 3F7	<a href="#">Moodle</a>	<a href="#">Prof J Lasenby</a>
4F10	<a href="#">Deep learning and structured data</a>	M(6)	Exam		3F1, 3F3, 3F8	<a href="#">Moodle</a>	<a href="#">Prof. M.J. Gales</a>
4F12	<a href="#">Computer vision</a>	M(2)	Exam			<a href="#">Moodle</a>	<a href="#">Prof. R. Cipolla</a>
4F13	<a href="#">Probabilistic Machine Learning</a>	M(1)	Coursework		3F3	<a href="#">Machine learning lecture notes</a>	<a href="#">Prof C. Rasmussen</a>
4F14	<a href="#">Computer Systems</a>	L(5)	Exam and Coursework	Part I Digital circuits and computing		<a href="#">Moodle</a>	<a href="#">Dr A H Gee</a>

### Group G: Bioengineering

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Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4G1	<a href="#">Mathematical biology of the cell</a>	M(7)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr T. Savin</a>
4G2	<a href="#">Biosensors</a>	L(6)	Coursework			<a href="#">Moodle</a>	<a href="#">Prof A. Seshia</a>
4G3	<a href="#">Computational neuroscience</a>	L(4)	Coursework		3G2, 3G3	<a href="#">Moodle</a>	<a href="#">Prof M Lengyel</a>
4G6	<a href="#">Cellular and molecular biomechanics</a>	L(11)	Exam		3C7	<a href="#">Camtools</a>	<a href="#">Dr V. Deshpande</a>

### 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	<a href="#">Strategic valuation</a>	M(vac)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr H. Jiang</a>
4I7	<a href="#">Electricity and environment</a>	L(6)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr M Pollitt</a>
4I8	<a href="#">Medical physics</a>	L(8)	Exam		3G4	<a href="#">Moodle</a>	<a href="#">Dr G Treece</a>
4I10	<a href="#">Nuclear reactor engineering</a>	M(5)	Exam	4M16		<a href="#">Moodle</a>	<a href="#">Dr E. Shwagerl</a>
4I11	<a href="#">Advanced fission and fusion systems</a>	L(8)	Coursework	4M16		<a href="#">Moodle</a>	<a href="#">Dr E. Shwagerl</a>

### Group M: Multidisciplinary Modules

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4M1	<a href="#">French</a>	L(10)	Coursework			<a href="#">Moodle</a>	<a href="#">Mr D. Tual</a>
4M3	<a href="#">Spanish</a>	M(10)	Coursework			<a href="#">Moodle</a>	<a href="#">Mr S. Bianchi</a>
4M9	<a href="#">Surveying field course</a>	long vac	Coursework	Surveying experience			<a href="#">Dr D Liang</a>
4M12	<a href="#">Partial differential equations and variational methods</a>	L(1)	Exam			<a href="#">Moodle</a>	<a href="#">Dr J.S. Biggins</a>
4M16	<a href="#">Nuclear power engineering</a>	L(1)	Exam			<a href="#">Moodle</a>	<a href="#">Dr G.T. Parks</a>
4M17	<a href="#">Practical optimization</a>	M(11)	Coursework	3M1		<a href="#">Moodle</a>	<a href="#">Dr G Vinnicombe</a>
4M19	<a href="#">Advanced building physics</a>	M(2)	Coursework	3D8		<a href="#">Moodle</a>	<a href="#">Dr M. Overend</a>
4M20	<a href="#">Robotics</a>	M(8)	Coursework		3C5, 3C8, 3F2, 3F3	<a href="#">Moodle</a>	<a href="#">Dr F Iida</a>
4M21	<a href="#">Software engineering and design</a>	L(7)	Exam				<a href="#">Dr E. Punskeya</a>
4M22	<a href="#">Climate change mitigation</a>	M(12)	Coursework				<a href="#">Prof. J.M.Allwood</a>

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