

## Part IIB syllabuses; links to online 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 will publish an outline of the coursework requirements for Part IIB 100% coursework modules (being updated, link to follow) but you should see the module syllabus pages for further details.

### [Engineering Areas](#)

### [Course material 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 J. Taylor</a>
4A3	<a href="#">Turbomachinery I</a>	M(4)	Exam and coursework	3A1, 3A3		<a href="#">Moodle</a>	<a href="#">Prof R.J. Miller</a>
4A4	<a href="#">Aircraft stability and control</a>	M(6)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr M Vera-Morales</a>
4A7	<a href="#">Aircraft aerodynamics and design</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(4)	Exam	3A1		<a href="#">Moodle</a>	<a href="#">Prof. G. Hunt</a>
4A12	<a href="#">Turbulence and vortex dynamics</a>	M(2)	Exam	3A1	3A3	<a href="#">Moodle</a>	<a href="#">Dr J Li</a>
4A13	<a href="#">Combustion and engines</a>	L(5)	Exam		3A5, 3A6	<a href="#">Moodle</a>	<a href="#">Prof N Swaminathan</a>
4A15	<a href="#">Acoustics</a>	L(11)	Exam			<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>	L(5)	Exam		3B3, 3B5	<a href="#">Moodle</a>	<a href="#">Prof F. Udrea</a>
4B5	<a href="#">Quantum and Nano-technologies</a>	M(11)	Exam	3B5		<a href="#">Moodle</a>	<a href="#">Dr L. Sapienza</a>

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Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	Title (linked to syllabus)			Assumed	Useful		
4B1 1	<a href="#">Photonic systems</a>	M(5)	Exam		3B6	<a href="#">Moodle</a>	<a href="#">Prof T. Wilkinson</a>
4B1 9	<a href="#">Renewable electrical power</a>	M(2)	Exam	3B3, 3B4, 3B6		<a href="#">Moodle</a>	<a href="#">Prof H Joyce</a>
4B2 3	<a href="#">Optical Fibre Communication</a>	L(2)	Exam and coursework		3F4, 3B6	<a href="#">Moodle</a>	<a href="#">Prof S J Savory</a>
4B2 8	<a href="#">Very large scale integration (VLSI)</a>	M(7)	Exam and coursework	3B2	3B5	<a href="#">Moodle</a>	<a href="#">Dr M Tang</a>
4B2 9	<a href="#">Wireless Communication</a>	L(8)	Exam and coursework		3B2, 3F4	<a href="#">Moodle</a>	<a href="#">Prof O. Akan</a>

### 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	<a href="#">Designing with composites</a>	M(3)	Exam and Coursework			<a href="#">Moodle</a>	<a href="#">Prof A Markaki</a>
4C3	<a href="#">Advanced Functional Materials and Devices</a>	M(8)	Exam		3B5	<a href="#">Moodle</a>	<a href="#">Prof J H Durrell</a>
4C4	<a href="#">Design methods</a>	M(2)	Exam			<a href="#">Moodle</a>	<a href="#">Prof J. Cullen</a>
4C5	<a href="#">Design case studies</a>	L(4)	Coursework		4C4	<a href="#">Moodle</a>	<a href="#">Prof N. Crilly</a>
4C6	<a href="#">Advanced linear vibrations</a>	M(4)	Exam and Coursework	3C6		<a href="#">Moodle</a>	<a href="#">Dr T Butlin</a>
4C8	<a href="#">Vehicle Dynamics</a>	L(8)	Exam and Coursework		3C5, 3C6	<a href="#">Moodle</a>	<a href="#">Dr X Na</a>
4C1 1	<a href="#">Data-driven and learning based methods in mechanics and materials</a>	L(2)	Coursework		3C7, 3D7	<a href="#">Moodle</a>	<a href="#">Dr B Liu</a>

### Group D: Civil Engineering

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader					
Cod e	Title (linked to syllabus)			Assumed	Useful							
4D2	<a href="#">Advanced structural design</a>	L(3)	Coursework	3D3, 3D4		<a href="#">Moodle</a>	<a href="#">Prof SD Guest</a>					
4D5	<a href="#">Deep Foundations and Underground Construction</a>					M(8)	Exam	3D2				<a href="#">Moodle</a>
4D7	<a href="#">Concrete and Prestressed concrete</a>					M(4)	Exam and Coursework	2P8, 3D3				<a href="#">Moodle</a>
4D9	<a href="#">Offshore Geotechnical Engineering</a>					L(5)	Exam	3D2				<a href="#">Moodle</a>
4D10	<a href="#">Structural steelwork</a>					M(3)	Exam and Coursework	3D4	3D3			<a href="#">Moodle</a>
4D13	<a href="#">Architectural engineering</a>					M(1 2)	Coursework		3D3, 3D4, 3D8			<a href="#">Moodle</a>
4D15	<a href="#">Water management under climate change</a>					L(12 )	Coursework					<a href="#">Moodle</a>
4D17	<a href="#">Plate and shell structures</a>					L(6)	Exam					<a href="#">Moodle</a>

### Group E: Management and Manufacturing

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Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	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>
4E3	<a href="#">Business innovation in a digital age</a>	L(12)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr K Sayegh</a>
4E4	<a href="#">Management of technology</a>	M(9)	Exam			<a href="#">Moodle</a>	<a href="#">Dr L. Mortara</a>
4E5	<a href="#">International Business</a>	L(9)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr S Welch</a>
4E6	<a href="#">Accounting and finance</a>	M(9)	Exam			<a href="#">Moodle</a>	<a href="#">Dr L Mischchenko</a>
4E1 1	<a href="#">Strategic management</a>	L(12)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr C Coleridge</a>
4E1 2	<a href="#">Project management</a>	L(9)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr N. Oraopoulos</a>

### Group F: Information Engineering

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	Title (linked to syllabus)			Assumed	Useful		
4F1	<a href="#">Control system design</a>	M(5)	Exam and Coursework		3F1, 3F2	<a href="#">Moodle</a>	<a href="#">Prof G Vinnicombe</a>
4F2	<a href="#">Robust and nonlinear control</a>	L(7)	Coursework	3F2		<a href="#">Moodle</a>	<a href="#">Prof. F. Forni</a>
4F3	<a href="#">An optimisation based approach to control</a>	L(11)	Exam		3F1, 3F2	<a href="#">Moodle</a>	<a href="#">Prof I Lestas</a>
4F5	<a href="#">Advanced information theory and coding</a>	L(6)	Exam	3F7	3F1, 3F4	<a href="#">Moodle</a>	<a href="#">Prof A Guilleni Fabregas</a>
4F7	<a href="#">Statistical Signal and Network Models</a>	M(3)	Exam	3F1, 3F3, 3F8	3M1	<a href="#">Moodle</a>	<a href="#">Prof S Godsill</a>
4F1 0	<a href="#">Deep learning and structured data</a>	M(6)	Exam		3F1, 3F3, 3F8	<a href="#">Moodle</a>	<a href="#">Prof M Gales</a>
4F1 2	<a href="#">Computer vision</a>	M(2)	Exam			<a href="#">Moodle</a>	<a href="#">Prof R. Cipolla</a>
4F1 3	<a href="#">Probabilistic Machine Learning</a>	M(1)	Coursework		3F3	<a href="#">Machine learning lecture notes</a> <a href="#">Moodle</a>	<a href="#">Dr H Ge</a>
4F1 4	<a href="#">Computer Systems</a>	L(5)	Exam and Coursework	Part I Digital circuits and computing		<a href="#">Moodle</a>	<a href="#">Prof A H Gee</a>

### Group G: Bioengineering

Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	Title (linked to syllabus)			Assumed	Useful		
4G2	<a href="#">Bioelectronics</a>	M(3)	Coursework			<a href="#">Moodle</a>	<a href="#">Prof G. Malliaras</a>
4G3	<a href="#">Computatio</a>	L(4)	Coursework		3G2, 3G3	<a href="#">Moodle</a>	<a href="#">Prof M.</a>

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Module		Term m (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	Title (linked to syllabus)			Assumed	Useful		
	<a href="#">nal neuroscience</a>						<a href="#">Lengyel</a>
4G7	<a href="#">Control and Computation in Living Systems</a>	M(4)	Exam		3G1,3G2, 3G3, 3F0	<a href="#">Moodle</a>	<a href="#">Dr T. O'Leary</a>
4G9	<a href="#">Biomedical engineering</a>	L(11)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr T. Bashford</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 m (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	Title (linked to syllabus)			Assumed	Useful		
4I1	<a href="#">Strategic valuation</a>	M(v ac)	Coursework			<a href="#">Moodle</a>	<a href="#">Dr H Jiang</a>
4I8	<a href="#">Medical physics</a>	L(8)	Exam		3G4	<a href="#">Moodle</a>	<a href="#">Prof 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	4I10		<a href="#">Moodle</a>	<a href="#">Dr N Read</a>

### Group M: Multidisciplinary Modules

Module		Term m (set)	Form of assessment	Prerequisites		On-line resources	Leader
Cod e	Title (linked to syllabus)			Assumed	Useful		
4M1	<a href="#">French</a>	L(10 )	Coursework			<a href="#">Moodle</a>	<a href="#">Prof D Tual</a>
4M3	<a href="#">Spanish</a>	M(1 0)	Coursework			<a href="#">Moodle</a>	<a href="#">Mr S. Bianchi</a>
4M1 2	<a href="#">Partial differential equations and variational methods</a>	L(1)	Exam			<a href="#">Moodle</a>	<a href="#">Prof J. Biggins</a>
4M1 6	<a href="#">Nuclear power engineering</a>	L(1)	Exam			<a href="#">Moodle</a>	<a href="#">Dr P Cosgrove</a>
4M1 7	<a href="#">Practical optimization</a>	M(1 1)	Coursework	3M1		<a href="#">Moodle</a>	<a href="#">Prof G Wells</a>
4M1 9	<a href="#">Advanced building physics</a>	M(1)	Coursework	3D8		<a href="#">Moodle</a>	<a href="#">Prof G.R. Hunt</a>
4M2 0	<a href="#">Introduction to robotics</a>	M(1 2)	Coursework			<a href="#">Moodle</a>	<a href="#">Prof F Forni</a>
4M2 1	<a href="#">Software engineering and design</a>	L(1)	Exam			<a href="#">Moodle</a>	<a href="#">Dr E Punskeya</a>
4M2 2	<a href="#">Climate change mitigation</a>	M(1 1)	Coursework			<a href="#">Moodle</a>	<a href="#">Prof J.M. Allwood</a>
4M2 3	<a href="#">Electricity and environment</a>	L(6)	Coursework			<a href="#">Moodle</a>	<a href="#">Prof M Pollitt</a>
4M2 4	<a href="#">Computational statistics and machine learning</a>	M(8)	Exam and coursework	3F3, 3F8, 3M1		<a href="#">Moodle</a>	<a href="#">Prof M Girola</a>

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Module		Term (set)	Form of assessment	Prerequisites		On-line resources	Leader
Code	Title (linked to syllabus)			Assumed	Useful		
4M26	<a href="#">Algorithms and data structures</a>	L(3)	Exam			<a href="#">Moodle</a>	<a href="#">Prof P O Krist</a>
4M29	<a href="#">Designed to Lead</a>	M(10)	Coursework			<a href="#">Moodle</a>	<a href="#">Ms K Lanuch</a>

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