Part IIB Modules 2025-26

Conditions for candidates:

− candidates must offer 8 modules for examination;

− normally candidates may offer only one module from any set.

− in addition, candidates may take not more than three from the following: 4E modules; 4I1; 4M1–4; 4M23, 4M28, and 4M29 (when running);

− no candidate who offered any module for Part IIA may again offer the same module for Part IIB.

Notes:

− there will be no Group R (research) modules available to Part IIB students in 2025-26;

− as we do not have exclusive control over imported modules we cannot guarantee that they will not clash with other sets;

− pre-requisites are listed below for new/revised/returning modules only. For pre-existing modules the individual syllabus pages are the definitive source of information about pre-requisites. A summary is also given on the syllabus index page;

− *indicates a capped module - all information is on the syllabus page;

Candidates are advised to take note of the conditions of exemption which are set by the professional engineering institutions that accredit the course: http://teaching.eng.cam.ac.uk/content/accreditation-meng#coe.

− c = coursework only, p = exam only, p+c = coursework and exam.

Set	Unit	Title	Mode
Group A: Energy, Fluid Mechanics, and Turbomachinery			
IIBM1	4A2	Computational Fluid Dynamics	c
IIBM4	4A3	Turbomachinery I	p+c
IIBM6	4A4	Aircraft Stability and Control	c
IIBM8	4A7	Aircraft Aerodynamics and Design	c
IIBM7	4A9	Molecular Thermodynamics	p
IIBL4	4A10	Flow Instability	p
IIBM2	4A12	Turbulence and Vortex Dynamics	p
IIBL5	4A13	Combustion and Engines	p
IIBL11	4A15	Acoustics	p
Group B: Electrical Engineering			
IIBL5	4B2	Power Microelectronics	p
IIBM11	4B5	Quantum and Nano-technologies	p
IIBM5	4B11	Photonic Systems	p
IIBM2	4B19	Renewable Electrical Power	p
IIBL2	4B23	Optical Fibre Communication	p+c
IIBM7	4B28	Very large scale integration (VLSI)	p+c
IIBL8	4B29	Wireless Communication	p+c
Group C: Mechanics, Materials, and Design			
IIBM3	4C2	Designing with Composites	p+c
IIBM8	4C3	Advanced Functional Materials and Devices	p
IIBM2	4C4	Design Methods	p
IIBL4	4C5	Design Case Studies	c
IIBM4	4C6	Advanced Linear Vibrations	p+c
IIBL8	4C8	Vehicle Dynamics	p+c

IIBL2	4C11	Data-driven and Learning Based Methods in Mechanics and Materials	c

Group D: Civil, Structural, and Environmental Engineering

IIBL3	4D2	Advanced Structural Design	c
IIBM8	4D5	Deep Foundations and Underground Construction	p
IIBM4	4D7	Concrete and Prestressed Concrete	p+c
IIBL5	4D9	Offshore Geotechnical Engineering	p
IIBM3	4D10	Structural Steelwork	p+c
IIBM12	4D13	Architectural Engineering	c
IIBL12	4D15	Water management under climate change	c
IIBL6	4D17	Plate and Shell Structures	p

Group E: Management and Manufacturing

IIBM9	4E1	Innovation and Strategic Management of Intellectual Property	c
IIBL12	4E3	Business Innovation in a Digital Age	c
IIBM9	4E4	Management of Technology	p
IIBL9	4E5	International Business	c
IIBM9	4E6	Accounting and Finance	p
IIBL12	4E11	Strategic Management	c
IIBL9	4E12	Project Management	c

Group F: Information Engineering

IIBM5	4F1	Control System Design	p+c
IIBL7	4F2	Robust and Nonlinear Control	c
IIBL11	4F3	An Optimisation Based Approach to Control	p
IIBL6	4F5	Advanced Information Theory and Coding	p
IIBM3	4F7	Statistical Signal and Network Models	p
IIBM6	4F10	Deep Learning and Structured data	p
IIBM2	4F12	Computer Vision	p
IIBM1	4F13	Probabilistic Machine Learning	c
IIBL5	4F14	Computer Systems	p+c

Group G: Bioengineering

IIBM3	4G2	Bioelectronics	c
IIBL4	4G3	Computational Neuroscience	c
IIBM4	4G7	Control and Computation in Living Systems	p
IIBL11	4G9	Biomedical Engineering	c

Group I: Imported modules

IIBCV	4I1	Strategic Valuation (TPE25)	c
IIBL8	4I8	Medical Physics	p
IIBM5	4I10	Nuclear Reactor Engineering	p
IIBL8	4I11	Advanced Fission and Fusion Systems	c

Group M: Multidisciplinary modules

IIBL10	4M1	French	c
IIBM10	4M3	Spanish	c
IIBL1	4M12	Partial Differential Equations & Variational Methods	p

IIBL1	4M16	Nuclear Power Engineering	p
IIBM11	4M17	Practical Optimization	c
IIBM1	4M19	Advanced Building Physics	c
IIBM12	4M20	Introduction to Robotics	c
IIBL1	4M21	Software Engineering and Design	p
IIBM11	4M22	Climate Change Mitigation	c
IIBL6	4M23	Electricity and Environment (TPE22)	c
IIBM8	4M24	Computational Statistics and Machine Learning	p+c
IIBL3	4M26	Algorithms and Data Structures	p
IIBM10	4M29	Designed to Lead	c

Group S: Modules shared with Part IIA

IIBM2	4C4	Design Methods	p
IIBL1	4M12	Partial Differential Equations & Variational Methods	p
IIBL1	4M16	Nuclear Power Engineering	p
IIBL1	4M21	Software Engineering and Design	p

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	4A2	Computational Fluid Dynamics	c
IIBM1	4F13	Probabilistic Machine Learning	c
	4M19	Advanced Building Physics	c
	4B19	Renewable Electrical Power	p
IIBM2	4C4	Design Methods	p
	4A12	Turbulence and Vortex Dynamics	p
	4F12	Computer Vision	p
	4C2	Designing with Composites	p+c
IIBM3	4D10	Structural Steelwork	p+c
	4F7	Statistical Signal and Network models	p
	4G2	Bioelectronics	c
	4A3	Turbomachinery I	p+c
IIBM4	4C6	Advanced Linear Vibrations	p+c
	4D7	Concrete and Prestressed Concrete	p+c
	4G7	Control and Computation in Living Systems	p
	4B11	Photonic Systems	p
IIBM5	4F1	Control System Design	p+c
	4I10	Nuclear Reactor Engineering	p
IIBM6	4A4	Aircraft Stability and Control	c
	4F10	Deep Learning and Structured data	p
IIBM7	4A9	Molecular Thermodynamics	p
	4B28	Very large scale integration (VLSI)	p+c
	4A7	Aircraft Aerodynamics and Design	c

Set	Unit	Title	Mode
IIBM8	4C3	Advanced Functional Materials and Devices	p
	4D5	Deep Foundations and Underground Construction	p
	4M24	Computational Statistics and Machine Learning	p+c
IIBM9	4E1	Innovation and Strategic Management of Intellectual Property	c
	4E4	Management of Technology	c
	4E6	Accounting and Finance	p
IIBM10	4M3	Spanish	c
	4M29	Designed to Lead	c
IIBM11	4B5	Quantum and Nano technologies	p
	4M17	Practical Optimization	c
	4M22	Climate Change Mitigation	c
IIBM12	4D13	Architectural Engineering	c
	4M20	Introduction to Robotics	c

Christmas Vacation

Set	Unit	Title	Mode
IIBCV	4I1	Strategic Valuation (TPE25)	c

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Set	Unit	Title	Mode
IIBL1	4M12	Partial Differential Equations & Variational Methods	p
	4M16	Nuclear Power Engineering	p
	4M21	Software Engineering and Design	p
IIBL2	4C11	Data-driven and Learning Based Methods in Mechanics and Materials	c
	4B23	Optical Fibre Communication	p+c
IIBL3	4D2	Advanced Structural Design	c
	4M26	Algorithms and Data Structures	p
IIBL4	4A10	Flow Instability	p+c
	4C5	Design Case Studies	c
	4G3	Computational Neuroscience	c
IIBL5	4A13	Combustion and Engines	p
	4B2	Power Microelectronics	p
	4D9	Offshore Geotechnical Engineering	p
	4F14	Computer Systems	p+c
IIBL6	4D17	Plate and Shell Structures	p
	4F5	Advanced Information Theory and Coding	p
	4M23	Electricity and Environment (TPE22)	c
IIBL7	4F2	Robust and Nonlinear Control	c
	4C8	Vehicle Dynamics	p+c

IIBL8	4I8	Medical Physics	p
	4B29	Wireless Communication	p+c
	4I11	Advanced Fission and Fusion Systems	c
IIBL9	4E5	International Business	c
	4E12	Project Management	c
IIBL10	4M1	French	c
IIBL11	4A15	Acoustics	p
	4F3	An Optimisation Based Approach to Control	p
	4G9	Biomedical Engineering	c
IIBL12	4D15	Water Management under Climate Change	c
	4E11	Strategic Management	c
	4E3	Business Innovation in a Digital Age	c