

IIB MODULES FOR 2017-18

Candidates must offer 8 modules for examination. Candidates may offer only one module from any chosen set as listed below. In addition, students may take not more three from the following: 4E modules; 4I1 and 4I7; 4M1–3; and (when available) 4D16. Students may not take more than two 4E modules (one per term).

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

There will be no Group R (research) modules available to Part IIB students in 2017-18.

Please note that as we do not have exclusive control over Imported Modules we cannot guarantee that they will not clash with any other set.

Unit	Name	Set	Mode	Notes
Group A: Energy, Fluid Mechanics, and Turbomachinery				
4A2	Computational Fluid Dynamics	IIBM1	c	
4A3	Turbomachinery I	IIBM4	p+c	
4A4	Aircraft Stability and Control	IIBM7	c	Has coursework in Christmas vacation, and further lecture in Lent. Max 30 so may ballot.
4A7	Aerodynamics	IIBM8	c	
4A9	Molecular Thermodynamics	IIBM5	p	
4A10	Flow Instability	IIBL11	p	
4A12	Turbulence and Vortex Dynamics	IIBL3	p	
4A13	Combustion and IC Engines	IIBL5	p	
4A15	Aeroacoustics	IIBM6	p	
Group B: Electrical Engineering				
4B2	Power Microelectronics	IIBM6	p	
4B6	Solid State Devices and Chemical/Biological Sensors	IIBL3	p	
4B11	Photonic Systems	IIBM5	p	
4B13	Electronic Sensors and Instrumentation	IIBL1	p	
4B19	Renewable Electrical Power	IIBM2	p	Pre-reqs 3B3, 3B4, 3B6
4B21	Analogue Integrated Circuits	IIBM3	p	
4B22	Flexible Electronics	IIBL5	p	
4B23	Optical Fibre Communication	IIBL2	p+c	
4B24	Radio Frequency Systems	IIBL4	p+c	Pre-req 3B1
4B25	Embedded Systems for the Internet of Things	IIBM7	c	
Group C: Mechanics, Materials, and Design				
4C2	Designing with Composites	IIBM3	p+c	
4C3	Electrical and Nano Materials	IIBM8	p	
4C4	Design Methods	IIBM2	p	Shared with IIA
4C5	Design Case Studies	IIBL4	c	
4C6	Advanced Linear Vibrations	IIBM4	p+c	
4C7	Random and Non-Linear Vibrations	IIBM5	p+c	
4C8	Vehicle Dynamics	IIBL8	p+c	
4C9	Continuum Mechanics	IIBL7	p	
4C15	MEMS: Design	IIBL2	p+c	
Group D: Civil, Structural, and Environmental Engineering				
4D4	Construction Engineering	IIBL4	c	
4D5	Foundation Engineering	IIBL5	p	
4D6	Dynamics in Civil Engineering	IIBL2	p+c	
4D7	Concrete Structures	IIBM4	p+c	
4D8	Pre-Stressed Concrete	IIBL1	p	Shared with IIA. Alternates annually with 4D16.
4D10	Structural Steelwork	IIBM3	p+c	
4D13	Architectural Engineering	IIBM8	c	
4D14	Contaminated Land & Waste Containment	IIBL3	p+c	
Group E: Management and Manufacturing				
4E1	Innovation and Strategic Management of Intellectual Property	IIBM9	c	
4E3	Business Innovation in a Digital Age	IIBM9	c	
4E4	Management of Technology	IIBM9	c	
4E5	International Business	IIBL9	c	
4E6	Accounting and Finance	IIBM9	c	
4E11	Strategic Management	IIBL9	c	
4E12	Project Management	IIBL9	c	IIB Engineering students only.
Group F: Information Engineering				
4F1	Control System Design	IIBM7	p+c	
4F2	Robust and Nonlinear Systems and Control	IIBL7	p	
4F5	Advanced Communications & Coding	IIBL6	p	
4F7	Statistical Signal Analysis	IIBM4	p	Revised and with new name. Pre-req. 3F3
4F8	Image Processing and Image Coding	IIBL3	p	
4F10	Deep Learning and Structured data	IIBM6	p	
4F12	Computer Vision	IIBM2	p	
4F13	Probabilistic Machine Learning	IIBM1	c	
4F14	Computer Systems	IIBL5	p+c	Part I Digital Circuits and Computing assumed.

Group G: Bioengineering				
4G1	Mathematical Biology of the Cell	IIBM11	c	Capped at 15
4G2	Biosensors	IIBL6	c	
4G3	Computational Neuroscience	IIBL4	c	
4G4	Biomimetics	IIBL11	c	
Group M: Multidisciplinary modules				
4M1	French	IIBL10	c	
4M2	German	IIBL10	c	
4M3	Spanish	IIBM10	c	
4M9	Surveying Field Course	IIBLV	c	Long vacation module taken in previous summer Cap=16
4M12	Partial Differential Equations and Variational Methods	IIBL1	p	Shared with IIA
4M14	Sustainable Development	IIBM7	c	
4M16	Nuclear Power Engineering	IIBL1	p	Shared with IIA.
4M17	Practical Optimization	IIBM11	c	
4M18	Present and Future Energy Systems	IIBM3	p	
4M19	Advanced Building Physics	IIBM2	c	
4M20	Robotics	IIBM8	c	
4M21	Software Engineering and Design	IIBL7	p	
Group I: Imported modules				
4I1	Strategic Valuation (TPE6)	IIBCV	c	Christmas vacation module. Cap= 10. Borrow from Technology Policy MPhil
4I7	Electricity and Environment (TPE7)	IIBL6	c	Borrow from Technology Policy MPhil
4I8	Medical Physics	IIBL8	p	Borrow from Physics.
4I10	Nuclear Reactor Engineering	IIBM5	p	Borrow from Nuclear Energy MPhil.
4I11	Advanced Fission and Fusion Systems	IIBL8	c	Borrow from NE MPhil. CW only.

IIB SETS MICHAELMAS TERM 2017-18

All lectures are AM except those indicated as PM.

Set	Unit	Title	Mode	Notes
	4A2	Computational Fluid Dynamics	c	
IIBM1	4F13	Probabilistic Machine Learning	c	
	4B19	Renewable Electrical Power	p	Pre-reqs 3B3, 3B4, 3B6
IIBM2	4C4	Design Methods	p	Shared with IIA
	4F12	Computer Vision	p	
	4M19	Advanced Building Physics	c	
	4B21	Analogue Integrated Circuits	p	
IIBM3	4C2	Designing with Composites	p+c	
	4D10	Structural Steelwork	p+c	
	4M18	Present and Future Energy Systems	p	
	4A3	Turbomachinery I	p+c	
	4C6	Advanced Linear Vibrations	p+c	
IIBM4	4D7	Concrete Structures	p+c	
	4F7	Statistical Signal Analysis	p	Pre-req. 3F3
	4A9	Molecular Thermodynamics	p	
	4B11	Photonic Systems	p	
	4C7	Random and Non-Linear Vibrations	p+c	
	4I10	Nuclear Reactor Engineering	p	
	4A15	Aeroacoustics	p	
IIBM6	4B2	Power Microelectronics	p	
	4F10	Statistical Pattern Processing	p	
	4A4	Aircraft Stability and Control	c	
	4B25	Embedded Systems for the Internet of Things	c	
	4F1	Control System Design	p+c	
	4M14	Sustainable Development	c	
	4A7	Aerodynamics	c	
	4C3	Electrical and Nano Materials	p	
	4D13	Architectural Engineering	c	
	4M20	Robotics	c	
	4E1	Innovation and Strategic Management of Intellectual Property	c	
	4E3	Business Innovation in a Digital Age	c	
	4E4	Management of Technology	c	
	4E6	Accounting and Finance	c	
IIBM10	4M3	Spanish	c	
	4G1	Mathematical Biology of the Cell	c	Cap=15
	4M17	Practical Optimization	c	
Christmas Vacation				
IIBM13	4I1	Strategic Valuation (TPE6)	c	Christmas vacation module. Cap=10

IIB SETS LENT TERM 2017-18

Set	Unit	Title	Mode	Notes
IIBL1	4D8	Pre-Stressed Concrete	p	Alts. with 4D16
	4B13	Electronic Sensors and Instrumentation	p	
	4M12	Partial Differential Equations & Variational Methods	p	Shared with IIA
	4M16	Nuclear Power Engineering	p	Shared with IIA
IIBL2	4B23	Optical Fibre Communication	p+c	
	4C15	MEMS: Design	p+c	
	4D6	Dynamics in Civil Engineering	p+c	
IIBL3	4A12	Turbulence and Vortex Dynamics	p	
	4B6	Solid State Devices & Chemical/Biological Sensors	p	
	4D14	Contaminated Land & Waste Containment	p+c	
	4F8	Image Processing and Image Coding	p	
IIBL4	4B24	Radio Frequency Systems	p+c	Pre-req 3B1
	4C5	Design Case Studies	c	
	4D4	Construction Engineering	c	
	4G3	Computational Neuroscience	c	
IIBL5	4A13	Combustion and IC Engines	p	
	4B22	Flexible Electronics	p	
	4D5	Foundation Engineering	p	
	4F14	Computer Systems	p+c	Part I Digital Circuits and Computing assumed.
IIBL6	4F5	Advanced Communications and Coding	p	
	4G2	Biosensors	c	
	4I7	Electricity and Environment	c	
IIBL7	4C9	Continuum Mechanics	p	
	4F2	Robust and Nonlinear Systems and Control	p	
	4M21	Software Engineering and Design	p	
IIBL8	4C8	Vehicle Dynamics	p+c	
	4I8	Medical Physics	p	
	4I11	Advanced Fission and Fusion Systems	p	
IIBL9	4E5	International Business	c	
	4E11	Strategic Management	c	
	4E12	Project Management	c	Part IIB Eng students only
IIBL10	4M1	French	c	
	4M2	German	c	
IIBL11	4G4	Biomimetics	c	
	4A10	Flow Instability	p	
Long Vacation				
LV1	4M9	Surveying field course	c	Cap =16