

## Engineering Tripos, Part IIB, 2016-17: Notice

The Faculty Board of Engineering give notice that the modules prescribed for the examinations to be held in 2017, and the mode of examination for each module, will be as follows:

**Key:** c: Coursework p: Exam p+c: Exam and Coursework

Modules in red indicate new for 2016-17

Modules in blue indicate change of set from last year

Unit	Name	Set	Mode	Notes
<b>Group A: Energy, Fluid Mechanics, and Turbomachinery</b>				
4A2	Computational Fluid Dynamics	IIBM1	c	
4A3	Turbomachinery I	IIBM7	p+c	
4A4	Aircraft Stability and Control	IIBM10	c	Has coursework in Christmas vacation, and further lecture in Lent. Max 30 so may ballot.
4A7	Aerodynamics	IIBM3	c	
4A9	Molecular Thermodynamics	IIBM6	p	
4A10	Flow Instability	IIBL6	p	
4A12	Turbulence and Vortex Dynamics	IIBL3	p	
4A13	Combustion and IC Engines	IIBL5	p	
4A15	Aeroacoustics	IIBM9	p	

### Group B: Electrical Engineering

4B2	Power Microelectronics	IIBM9	p	
4B5	Nanotechnology	IIBM10	p+c	
4B6	Solid State Devices and Chemical/Biological Sensors	IIBL3	p	
4B7	VLSI Design, Technology and CAD	IIBL1	p+c	
4B11	Photonic Systems	IIBM8	p	
4B19	Renewable Electrical Power	IIBM2	p	
4B20	Display Technology	IIBL6	p	
4B21	Analogue Integrated Circuits	IIBM3	p	
4B22	Flexible Electronics	IIBL5	p	

### Group C: Mechanics, Materials, and Design

4C2	Designing with Composites	IIBM5	p+c	
4C3	Electrical and Nano Materials	IIBM6	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	IIBM8	p+c	
4C8	Vehicle Dynamics	IIBL1	p+c	New name for 2016-17
4C9	Continuum Mechanics	IIBM7	p	
4C15	MEMS: Design	IIBL7	p+c	
4C16	Advanced Machine Design	IIBL9	p+c	

### Group D: Civil, Structural, and Environmental Engineering

4D4	<b>Construction Engineering</b>	<b>IIBL1</b>	<b>c</b>	
4D5	Foundation Engineering	IIBL5	p	
4D6	Dynamics in Civil Engineering	IIBL2	p+c	
4D7	Concrete Structures	IIBL10	p+c	
4D10	Structural Steelwork	IIBM5	p+c	
4D13	Architectural Engineering	IIBM12	c	
4D16	<b>Construction Management</b>	<b>IIBM9</b>	<b>p</b>	<b>Shared with IIA. Alternates annually with 4D8.</b>
4D17	Plate and Shell Structures	IIBM3	c	

### Group E: Management and Manufacturing

4E3	Information Systems	IIBM15	c	
4E4	Management of Technology	IIBM17	c	
4E5	International Business	IIBL12	c	New name for 2016-17
4E6	Accounting and Finance	IIBM16	c	
4E11	Strategic Management	IIBL13	c	
4E12	Project Management	IIBL14	c	IIB Engineering students only.

### Group F: Information Engineering

4F1	Control System Design	IIBM6	p+c	
4F2	Robust and Nonlinear Systems and Control	IIBL9	p	
4F3	Optimal and Predictive Control	IIBL2	p	
4F5	Advanced Communications and Coding	IIBM7	p	
4F7	Digital Filters and Spectrum Estimation	IIBM8	p	
4F8	Image Processing and Image Coding	IIBL3	p	
4F10	Statistical Pattern Processing	IIBM9	p	
4F12	Computer Vision	IIBM2	p	
4F13	Probabilistic Machine Learning	IIBM11	c	

### Group G: Bioengineering

4G1	Mathematical Biology of the Cell	IIBL6	c	
4G2	<b>Biosensors</b>	<b>IIBL2</b>	<b>c</b>	
4G3	Computational Neuroscience	IIBL4	c	
4G4	Biomimetics	IIBL7	c	

### Group M: Multidisciplinary modules

4M1	French	IIBL15	c	
4M3	Spanish	IIBM11	c	
4M9	Surveying Field Course	LV1	c	Long vacation module taken in previous summer <b>Cap=16</b>
4M12	Partial Differential Equations and Variational Methods	IIBL11	p	Shared with IIA
4M14	Sustainable Development	IIBM13	c	
4M15	Sustainable Energy	IIBL8	p+c	
4M16	Nuclear Power Engineering	IIBL11	p	Shared with IIA.
4M17	Practical Optimization	IIBM19	c	
4M18	Present and Future Energy Systems	IIBM5	p	
4M19	Advanced Building Physics	IIBM14	c	
4M20	Robotics	IIBM12	c	
4M21	Software Engineering and Design	IIBL9	p	CANNOT be taken in 2016-17 if 3F6 was taken in 2015-16.

### Group I: Imported modules

411	Strategic Valuation (TPE6)	IIBM18	c	Christmas vacation module. <b>Cap= 10.</b> Borrowed from Technology Policy MPhil
417	Electricity and Environment (TPE7)	IIBL7	c	Borrowed from Technology Policy MPhil
418	Medical Physics	IIBL10	p	Borrowed from Physics.
4110	Nuclear Reactor Engineering	IIBM13	p	Borrowed from Nuclear Energy MPhil.
4111	Advanced Fission and Fusion Systems	IIBL10	p	Borrowed from Nuclear Energy MPhil..
4112	Social and Technological Network Data Analytics	IIBL17	c	Capped at 4. Ballot, if required, is in October. Borrowed from Advanced Computer Science MPhil. New name for 2016-17.

### 4113 is not running in 2016-17

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 than three from the following: any of the 4E papers; 411 and 417; 4M1–4, and (when available) 4D16.

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 2016-17.

\* Please note that as we do not have exclusive control over all sets we cannot guarantee that those marked with a star will not clash with any other set.

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Set	Unit	Title	Mode	Notes
IIBM1	4A2	Computational Fluid Dynamics	c	
IIBM2	4B19	Renewable Electrical Power	p	
	4C4	Design Methods	p	Shared with IIA
	4F12	Computer Vision	p	
IIBM3	4A7	Aerodynamics	c	
	4B21	Analogue Integrated Circuits	p	
	4D17	Plate and Shell Structures	c	
IIBM4	4C6	Advanced Linear Vibrations	p+c	
IIBM5	4C2	Designing with Composites	p+c	
	4D10	Structural Steelwork	p+c	
	4M18	Present and Future Energy Systems	p	
IIBM6	4C3	Electrical and Nano Materials	p	
	4F1	Control System Design	p+c	
	4A9	Molecular Thermodynamics	p	
IIBM7	4A3	Turbomachinery I	p+c	
	4C9	Continuum Mechanics	p	
	4F5	Advanced Communications and Coding	p	
IIBM8	4B11	Photonic Systems	p	
	4C7	Random and Non-Linear Vibrations	p+c	
	4F7	Digital Filters and Spectrum Estimation	p	
IIBM9	4A15	Aeroacoustics	p	
	4B2	Power Microelectronics	p	
	4F10	Statistical Pattern Processing	p	
	4D16	Construction Management	p	Share with IIA
IIBM10	4A4	Aircraft Stability and Control	c	
	4B5	Nanotechnology	p+c	
IIBM11	4F13	Probabilistic Machine Learning	c	
	4M3	Spanish	c	
IIBM12	4D13	Architectural Engineering	c	
	4M20	Robotics	c	
IIBM13 *	4I10	Nuclear Reactor Engineering	p	
	4M14	Sustainable Development	c	
IIBM14	4M19	Advanced Building Physics	c	
IIBM15	4E3	Information Systems	c	
IIBM16	4E6	Accounting and Finance	c	
IIBM17	4E4	Management of Technology	c	

IIBM18	4I1	Strategic Valuation (TPE6)	c	Christmas vacation module. Cap = 10
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IIBM19	4M17	Practical Optimization	c	
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Set	Unit	Title	Mode	Notes
IIBL1	4B7	VLSI Design, Technology and CAD	p+c	
	4C8	Vehicle Dynamics	p+c	New name for 2016-17
	4D4	Construction Engineering	c	

IIBL2	4D6	Dynamics in Civil Engineering	p+c	
	4F3	Optimal and Predictive Control	p	
	4G2	Biosensors	c	

IIBL3	4A12	Turbulence and Vortex Dynamics	p	
	4B6	Solid State Devices & Chemical/Biological Sensors	p	
	4F8	Image Processing and Image Coding	p	

IIBL4	4C5	Design Case Studies	c	
	4G3	Computational Neuroscience	c	

IIBL5	4A13	Combustion and IC Engines	p	
	4D5	Foundation Engineering	p	
	4B22	Flexible Electronics	p	

IIBL6	4A10	Flow Instability	p	
	4B20	Display Technology	p	
	4G1	Mathematical Biology of the Cell	c	

IIBL7*	4G4	Biomimetics	c	
	4I7	Electricity and Environment	c	
	4C15	MEMS: Design	p+c	

IIBL8	4M15	Sustainable Energy	p+c	
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IIBL9	4C16	Advanced Machine Design	p+c	
	4F2	Robust and Nonlinear Systems and Control	p	
	4M21	Software Engineering and Design	p	

IIBL10*	4D7	Concrete Structures	p+c	
	4I8	Medical Physics	p	
	4I11	Advanced Fission and Fusion Systems	p	

IIBL11	4M12	Partial Differential Equations and Variational Methods	p	Shared with IIA
	4M16	Nuclear Power Engineering	p	Shared with IIA

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IIBL12	4E5	International Business	c	
IIBL13	4E11	Strategic Management	c	
IIBL14	4E12	Project Management	c	Part IIB Engineering students only
IIBL15	4M1	French	c	
IIBL17*	4I12	Social and Technological Network Data Analytics	c	May clash with other sets

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### Long Vacation

LV1	4M9	Surveying field course	c	Cap =16
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