

CAMBRIDGE UNIVERSITY ENGINEERING DEPARTMENT

PART IA BOOKLIST 2011/12

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PAPER 1

<b><u>MECHANICS</u></b>		[Dr HEM Hunt] Michaelmas	
*HIBBELER, R.C.	†	ENGINEERING MECHANICS (SI UNITS) DYNAMICS <u>Prentice Hall</u> 3 <sup>rd</sup> edition 2004 STATICS <u>Prentice Hall</u> 3 <sup>rd</sup> edition 2004	RA.202 RA.200
*MERIAM, J.L. & KRAIGE, L.G.		ENGINEERING MECHANICS. VOL.1: STATICS <u>Wiley</u> 6 <sup>th</sup> edition 2008	RA.215
*MERIAM, J.L. & KRAIGE, L.G.	†	ENGINEERING MECHANICS. VOL.2: DYNAMICS <u>Wiley</u> 6 <sup>th</sup> edition 2008	RA.214
*PRENTIS, J.M.	†	DYNAMICS OF MECHANICAL SYSTEMS <u>Ellis Horwood</u> 2 <sup>nd</sup> edition 1980	RA.117
*PRENTIS, J.M.		ENGINEERING MECHANICS <u>Oxford University Press</u> 1979 ( <i>Good introductory text</i> )	RA.135
(† Equivalent coverage of whole course)			

<b><u>MECHANICAL VIBRATIONS</u></b>		[Prof RS Langley] Lent and Easter	
*DEN HARTOG, J.P.		MECHANICAL VIBRATIONS <u>Dover</u> 1984 reprint	RT.28
*HIBBELER, R.C.		ENGINEERING MECHANICS: DYNAMICS (SI UNITS) <u>Prentice Hall</u> 3 <sup>rd</sup> edition 2004	RA.202
*MEIROVITCH, L.		ELEMENTS OF VIBRATION ANALYSIS <u>McGraw-Hill</u> 2 <sup>nd</sup> edition 1986	RT.97
*MERIAM, J.L. & KRAIGE, L.G.		ENGINEERING MECHANICS. VOL.2: DYNAMICS <u>Wiley</u> 6 <sup>th</sup> edition 2008	RA.214
*PRENTIS, J.M.		DYNAMICS OF MECHANICAL SYSTEMS <u>Ellis Horwood</u> 2 <sup>nd</sup> edition 1980	RA.117

<b><u>THERMOFLUID MECHANICS</u></b>		[Dr H Babinsky, Prof N Collings & Dr AJ White] Lent and Easter	
*CENGEL, Y.A. & BOLES, M.A.		THERMODYNAMICS: AN ENGINEERING APPROACH <u>McGraw-Hill</u> 6 <sup>th</sup> edition 2007	VA.196
*HOMSY, G.M.(ed.)		MULTIMEDIA FLUID MECHANICS (CD-ROM) <u>Cambridge University Press</u> 2 <sup>nd</sup> edition 2004	TA.473

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*MASSEY, B.S., (Revised by WARD-SMITH, J.)	MECHANICS OF FLUIDS <u>Taylor &amp; Francis</u> 8 <sup>th</sup> edition 2005  Available as an <b>ebook</b> at: <a href="http://www.myilibrary.com?id=25661">http://www.myilibrary.com?id=25661</a>	TA.483
*MORAN, M.J. & SHAPIRO, H.N.	FUNDAMENTALS OF ENGINEERING THERMODYNAMICS <u>Wiley</u> 5 <sup>th</sup> edition (SI Units) 2006	VA.192
*NAKAYAMA, Y.; & BOUCHER, R.F. (eds)	INTRODUCTION TO FLUID MECHANICS <u>Arnold</u> 1999	TA.444
*ROGERS, G.F.C. & MAYHEW, Y.R.	ENGINEERING THERMODYNAMICS <u>Longman</u> 4 <sup>th</sup> edition 1992	VA.178
*SAMIMY, M., <i>et al.</i>	A GALLERY OF FLUID MOTION <u>Cambridge University Press</u> 2003	Folio TA.472
*SONNTAG, R.E., BORGNACKE, C., & VAN WYLEN, G.J.	FUNDAMENTALS OF THERMODYNAMICS <u>Wiley</u> 6 <sup>th</sup> edition 2003	VA.186
*VAN DYKE, M.	AN ALBUM OF FLUID MOTION <u>Parabolic Press</u> 1982	TA.313

PAPER 2

<b><u>STRUCTURAL MECHANICS</u></b> [Dr JM Lees & Dr M DeJong] <i>Michaelmas and Lent</i>		
<b><u>Introduction:</u></b>		
*GORDON, J.E.	STRUCTURES OR WHY THINGS DON'T FALL DOWN <u>Penguin</u> 1978 (various reprinting dates)	FJ.347
*HEYMAN, J.	THE SCIENCE OF STRUCTURAL ENGINEERING <u>Imperial College Press</u> 1999	FJ.562
*HEYMAN, J.	BASIC STRUCTURAL THEORY <u>Cambridge University Press</u> 2008  Available as an <b>ebook</b> at: <a href="http://www.myilibrary.com?id=138348">http://www.myilibrary.com?id=138348</a>	FJ.622
<b><u>Equilibrium:</u></b>		
*FRENCH, M.	INVENTION AND EVOLUTION <u>Cambridge University Press</u> 2 <sup>nd</sup> edition 1994	AP.292
*MERIAM, J.L. & KRAIGE, L.G.	ENGINEERING MECHANICS. VOL. 1: STATICS <u>Wiley</u> 6 <sup>th</sup> edition 2008	RA.215

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<b><u>Beams:</u></b>		
*CRANDALL, S.H. DAHL, N.C. & LARDNER, T.J.	INTRODUCTION TO THE MECHANICS OF SOLIDS, with SI Units <u>McGraw-Hill</u> 1972 (various reprinting dates) (includes some Part IB material)	FG.30
*HEYMAN, J.	STRUCTURAL ANALYSIS: A HISTORICAL APPROACH <u>Cambridge University Press</u> 1998	AA.331

<b><u>MATERIALS</u></b> [Dr HR Shercliff, Prof NA Fleck & Dr A Markaki] Lent and Easter		
*ASHBY, M., SHERCLIFF, H. & CEBON, D.	MATERIALS: ENGINEERING, SCIENCE, PROCESSING AND DESIGN <u>Butterworth-Heinemann</u> 2 <sup>nd</sup> edition 2010  1 <sup>st</sup> edition available as an <b>ebook</b> at: <a href="http://www.myilibrary.com/?id=96251">http://www.myilibrary.com/?id=96251</a>	JA.209
*ASHBY, M.F.	MATERIALS SELECTION IN MECHANICAL DESIGN <u>Butterworth Heinemann</u> 4 <sup>th</sup> edition 2010  3 <sup>rd</sup> edition available as an <b>ebook</b> at: <a href="http://www.myilibrary.com?id=75447">http://www.myilibrary.com?id=75447</a>	JA.208
*ASHBY, M.F. & JONES, D.R.H.	ENGINEERING MATERIALS 1 <u>Butterworth Heinemann</u> 3 <sup>rd</sup> edition 2005  Available as an <b>ebook</b> at: <a href="http://www.myilibrary.com?id=75450">http://www.myilibrary.com?id=75450</a>	JA.184  <b>4<sup>th</sup> edition available at JA.210</b>
*ASHBY, M.F. & JONES, D.R.H.	ENGINEERING MATERIALS 2 <u>Butterworth Heinemann</u> 3 <sup>rd</sup> edition 2005  Available as an <b>ebook</b> at: <a href="http://www.myilibrary.com?id=75451">http://www.myilibrary.com?id=75451</a>	JA.191
*CALLISTER, W.D.	MATERIALS SCIENCE & ENGINEERING: AN INTRODUCTION <u>Wiley</u> 7 <sup>th</sup> edition 2007	JA.203
*NEWAY, C. & WEAVER, G.	MATERIALS PRINCIPLES AND PRACTICE <u>Butterworths</u> (Open University) 1990	JA.150
*SCHAFFER, J.P., <i>et al.</i>	THE SCIENCE AND DESIGN OF ENGINEERING MATERIALS <u>McGraw-Hill</u> 2 <sup>nd</sup> edition 1999	JA.170

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## PAPER 3

<b><u>PHYSICAL PRINCIPLES OF ELECTRONICS</u></b> [Dr Wilkinson] Michaelmas		
No list provided.		

<b><u>LINEAR CIRCUITS AND DEVICES</u></b> [Dr C Durkan & Prof F Udrea] Michaelmas and Lent		
*AHMED, H. & SPREADBURY, P.J.	ANALOGUE AND DIGITAL ELECTRONICS FOR ENGINEERS <u>Cambridge University Press</u> 1984	NT.396
*BRADLEY, D.	BASIC ELECTRICAL POWER AND MACHINES <u>Chapman &amp; Hall</u> 1994	NE.129
*HOROWITZ, P & HILL, W.	THE ART OF ELECTRONICS, <u>Cambridge University Press</u> 2 <sup>nd</sup> edition 1989	NT.415
*SMITH, R.J. & DORF, R.C.	CIRCUITS, DEVICES AND SYSTEMS <u>Wiley</u> 5 <sup>th</sup> edition 1992	NN.405
*WARNES, L.A.A.	ELECTRONICS AND ELECTRICAL ENGINEERING <u>Palgrave Macmillan</u> 3 <sup>rd</sup> edition 2003	NN.446

<b><u>LINEAR CIRCUITS (AC)</u></b> [Dr Flack] Michaelmas		
No list provided.		

<b><u>DIGITAL CIRCUITS AND INFORMATION PROCESSING</u></b> [Prof RV Penty] Lent and Easter		
*BATES, M.	PIC MICROCONTROLLERS: AN INTRODUCTION TO MICROELECTRONICS <u>Newnes</u> 2 <sup>nd</sup> edition 2004	NQ.92
*DOWSING, R.D., WOODHAMS, F.W.D. & MARSHALL, I.	COMPUTERS FROM LOGIC TO ARCHITECTURE <u>McGraw-Hill</u> 2 <sup>nd</sup> edition 2000	EQ.283
*FLOYD, T.L.	DIGITAL FUNDAMENTALS <u>Pearson Prentice Hall</u> 9 <sup>th</sup> edition 2006	NQ.90
*GIBSON, J.R.	ELECTRONIC LOGIC CIRCUITS <u>Arnold</u> 3 <sup>rd</sup> edition 1992	NN.429
*SMITH, R.J. & DORF, R.C.	CIRCUITS, DEVICES AND SYSTEMS <u>Wiley</u> 5 <sup>th</sup> edition 1992	NN.405
*TINDER, R.F.	ENGINEERING DIGITAL DESIGN <u>Academic Press</u> 2 <sup>nd</sup> edition 2000	NQ.76

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<b><i>ELECTROMAGNETICS</i></b> [Dr TD Wilkinson] Lent		
*CARTER, R.G.	ELECTROMAGNETISM FOR ELECTRONICS ENGINEERS Chapman & Hall 2 <sup>nd</sup> edition 1992 <i>(This book is the one closest in level to the first-year course and is recommended as the best for students to buy. It does not cover the Part IB materials however)</i>	NA.142
*CHABAY, R.	ELECTRIC AND MAGNETIC INTERACTIONS Wiley 1995	NA.150
*HAMMOND, P.	ELECTROMAGNETISM FOR ENGINEERS: AN INTRODUCTORY COURSE Oxford University Press 4 <sup>th</sup> edition 1997	NA.145
*OATLEY, Sir Charles	ELECTRIC AND MAGNETIC FIELDS Cambridge University Press 1976 <i>(This is more advanced, and more mathematical than Carter's book, and covers the first-year work in more detail. Requires some knowledge of vectors)</i>	NA.113
*SADIKU, M.N.O.	ELEMENTS OF ELECTROMAGNETICS Oxford University Press 3rd edition 2001	NA.148

PAPER 4

<b><i>MATHEMATICAL METHODS</i></b> [Dr JP Longley] [Dr GN Wells] [ Prof PA Davidson] [Dr MP Juniper] Michaelmas [Prof RW Prager] Lent [Prof MC Smith] Easter		
*JAMES, G. <i>et al.</i>	MODERN ENGINEERING MATHEMATICS Pearson/Prentice Hall 4 <sup>th</sup> edition 2008 or 3 <sup>rd</sup> edition (2001)  <i>(Students wishing to purchase a copy should buy either 3<sup>rd</sup> edition (2001) or 4<sup>th</sup> edition (2008))</i>	EA.185
*KREYSZIG, E.	ADVANCED ENGINEERING MATHEMATICS McGraw-Hill 8 <sup>th</sup> edition 1998, 9th edition 2005 or 10th edition 2011 <i>(A comprehensive reference to standard mathematical formulae and techniques. Students wishing to purchase a copy should buy either 10<sup>th</sup> edition (2011) or 9<sup>th</sup> edition (2005) or the 8<sup>th</sup> edition (1998))</i>	EA.164
*NEILL, H. AND QUADLING, D.	CORE 1 AND 2 FOR OCR (Cambridge Advanced Level Mathematics) Cambridge University Press 2004 <b>MATHS REVISION BOOK</b>	CUED LIBRARY MATHS 'A' REF. SHELF (EA)
*NEILL, H. AND QUADLING, D.	CORE 3 AND 4 FOR OCR (Cambridge Advanced Level Mathematics) Cambridge University Press 2005 <b>MATHS REVISION BOOK</b>	CUED LIBRARY MATHS 'A' REF. SHELF(EA)

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*NEILL, H. AND QUADLING, D.	FURTHER PURE 1 FOR OCR (Cambridge Advanced Level Mathematics) <u>Cambridge University Press</u> 2004 <b>MATHS REVISION BOOK</b>	CUED LIBRARY MATHS 'A' REF. SHELF(EA)
*NEILL, H. AND QUADLING, D.	FURTHER PURE 2 AND 3 FOR OCR (Cambridge Advanced Level Mathematics) <u>Cambridge University Press</u> 2005 <b>MATHS REVISION BOOK</b>	CUED LIBRARY MATHS 'A' REF. SHELF(EA)
*RILEY, K.F., HOBSON, M.P., and BENCE, S.J.	MATHEMATICAL METHODS FOR PHYSICS AND ENGINEERING: A COMPREHENSIVE GUIDE <u>Cambridge University Press</u> (any edition)  Available as an <b>ebook</b> at: <a href="http://linux02.lib.cam.ac.uk:2048/login?url=http://cco.cambridge.org/book?id=ccol0521861535_CCOL0521861535">http://linux02.lib.cam.ac.uk:2048/login?url=http://cco.cambridge.org/book?id=ccol0521861535_CCOL0521861535</a>	EA.170 or EA.161 or EA.183
*SIVIA, D.S. & RAWLINGS, S.G.	FOUNDATIONS OF SCIENCE MATHEMATICS <u>Oxford University Press</u> 1999 <b>MATHS REVISION BOOK</b>	EA.174

**COMPUTING** [Dr G Csanyi] Michaelmas and Lent

*BERMAN, A.M.	DATA STRUCTURES VIA C++: OBJECTS BY EVOLUTION <u>Oxford University Press</u> 1997 <i>(Chapters 5 and 6 contain course material on searching and sorting. Appendix A contains a useful review of C++ programming syntax. Students with some programming experience might like to explore the advanced topics covered in the rest of the book)</i>	EQP. 244
*DEITEL, H.M. & DEITEL, P.J.	C++: HOW TO PROGRAM <u>Prentice Hall</u> 8 <sup>th</sup> edition 2011	EQP.312
*MCCONNELL, S.C.	CODE COMPLETE: A PRACTICAL HANDBOOK OF SOFTWARE CONSTRUCTION <u>Microsoft Press</u> 2 <sup>nd</sup> edition 2004	EQP.293

**COURSEWORK PAPERS**

**DIMENSIONAL ANALYSIS** [Dr GT Parks] Michaelmas

*PALMER, A.C.	DIMENSIONAL ANALYSIS AND INTELLIGENT EXPERIMENTATION <u>World Scientific</u> 2008	EV.18
*RHODES, R.S. & COOK, L.B.	BASIC ENGINEERING DRAWING <u>Longmans</u> 2 <sup>nd</sup> edition 1990	Folio AR.68

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<b><u>THE ENGINEER IN SOCIETY</u></b> [Dr THW Minshall] Michaelmas	
Material to be announced in lectures.	

<b><u>PRODUCT DESIGN</u></b> [Prof PJ Clarkson, Dr N Crilly] Lent		
*CROSS, N.	ENGINEERING DESIGN METHODS <u>Wiley</u> 3 <sup>rd</sup> edition 2000	AP.303
*FRENCH, M.J.	INVENTION AND EVOLUTION <u>Cambridge University Press</u> 2 <sup>nd</sup> edition 1994	AP.292
*FRENCH, M.J.	FORM, STRUCTURE AND MECHANISM <u>Macmillan</u> 1992	AP.272
*GLEGG, G.L.	THE DESIGN OF DESIGN <u>Cambridge University Press</u> 1969	AP.62
*KEATES. L.S. & CLARKSON. P.J.	COUNTERING DESIGN EXCLUSION - AN INTRODUCTION TO INCLUSIVE DESIGN <u>Springer</u> 2003	AP.312
*ULRICH, K.T. & EPPINGER, S.D.	PRODUCT DESIGN AND DEVELOPMENT <u>McGraw-Hill/Irwin</u> 4 <sup>th</sup> edition 2008	BN.252

<b><u>DRAWING</u></b> [Mr AL Johnson, Dr N Crilly, Dr J Moultrie] Michaelmas, Lent and Easter		
<i>Note: Booklets on projection theory and the intersection of surfaces are issued to undergraduates as part of the course</i>		
*BSI. (British Standards Institution)	PP 8888: 1:2005 DRAWING PRACTICE: A GUIDE FOR SCHOOLS AND COLLEGES TO BS 8888:2004	Folio AR.72
*RHODES, R.S. & COOK, L.B.	BASIC ENGINEERING DRAWING <u>Longmans</u> 2 <sup>nd</sup> edition 1990	Folio AR.68