

CAMBRIDGE UNIVERSITY ENGINEERING DEPARTMENT

PART IIB BOOKLIST 2011/12

The Library Shelfmark indicates where these works can be found in the Library. An additional copy of books marked with a star (*) will be available in a *Special Part II Reference Collection* kept in the Library; the attention of Directors of Studies (for College Librarians) will be drawn to these titles. N.B. Latest editions do not necessarily apply – Lecturers are asked to indicate when older editions remain acceptable.

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Group G: Engineering for the Life Sciences

4G1 – Systems Biology [Dr G Vinnicombe] Lent		
GILLESPIE, D.	MARKOV PROCESSES: AN INTRODUCTION FOR PHYSICAL SCIENCES <u>Academic Press</u> 1991	EP.322
ALON, U.	AN INTRODUCTION TO SYSTEMS BIOLOGY: DESIGN PRINCIPLES OF BIOLOGICAL CIRCUITS <u>Chapman & Hall</u> 2006	DB.144
KLIPP, E. <i>et al.</i>	SYSTEMS BIOLOGY IN PRACTICE: CONCEPTS, IMPLEMENTATION AND APPLICATION <u>Wiley</u> 2005	DB.145

4G2 Biosensors [Dr AA Seshia] Lent		
No reading list received		

4G4 – Biomimetics [Dr M Oyen] Michaelmas		
*FORBES, P.	THE GECKO'S FOOT: HOW SCIENTISTS ARE TAKING A LEAF FROM NATURE'S BOOK <u>Harper Perennial</u> 2006	AP.324
VINCENT, J.	STRUCTURAL BIOMATERIALS <u>Princeton University Press</u> Revised edition 1992	DB.114

4G6 – Cellular and Molecular Biomechanics [Dr V Deshpande] Michaelmas		
GIBSON, L.J. & ASHBY, M.F.	CELLULAR SOLIDS: STRUCTURES AND PROPERTIES <u>Cambridge University Press</u> 2nd edition 1991	JA.161
BRAY, D.	CELL MOVEMENTS: FROM MOLECULES TO MOTILITY <u>Garland</u> 2nd edition 2001	DB.139
HOWARD, J.	MECHANICS OF MOTOR PROTEINS AND THE CYTOSKELETON <u>Sinauer Associates</u>	DB.82

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Group I: Imported modules

411 – Strategic Valuation (TPE6) [Dr Yun Shin Lee] just after end of Michaelmas Term		
*BREALEY, R.A. MYERS, S.C. & ALLEN, F.	PRINCIPLES OF CORPORATE FINANCE <u>McGraw Hill/Irwin</u> 9th edition 2008 (10 th ed. at BS.587)	BS.566
*DE NEUFVILLE, R., SCHOLTES. S.	FLEXIBILITY IN ENGINEERING DESIGN <u>MIT Press</u> 2011	AP.334
LUENBERGER, D.G.	INVESTMENT SCIENCE <u>Oxford University Press</u> 1998	BS.526
SAVAGE, S.L.	DECISION MAKING WITH INSIGHT <u>Thomson</u> 2 nd edition 2003	BP.148

417 –Electricity & Environment [Dr WJ Nuttall] Michaelmas		
<u>Expected reading</u>		
JAMASB, T., NUTALL, W.J., AND POLLITT, M.G.	FUTURE ELECTRICITY TECHNOLOGIES AND SYSTEMS <u>CUP</u> 2006 Discount available for students on CUP book at CUP bookshop.	DE.159 JBS: HD9697.A2 J34
SCRASE, I. & MACKERRON, G. (eds)	ENERGY FOR THE FUTURE: A NEW AGENDA <u>Palgrave Macmillan</u> 2009 Available as an ebook at: http://lib.myilibrary.com/?id=244612	Not held by CUED Library
<u>Recommended reading</u>		
GRUBB, M., JAMASB, T., AND POLLITT M.G.	DELIVERING A LOW-CARBON ELECTRICITY SYSTEM: TECHNOLOGIES, ECONOMICS AND POLICY <u>CUP</u> 2008	DE.166
NUTTALL, W.J.	NUCLEAR RENAISSANCE: TECHNOLOGIES AND POLICIES FOR THE FUTURE OF NUCLEAR POWER <u>IOP</u> 2005	XA.31 JBS: TK9145.N87
TESTER, J.W.	SUSTAINABLE ENERGY: CHOOSING AMONG OPTIONS <u>MIT Press</u> 2005	DE.156

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MACKAY, D.J.C.	SUSTAINABLE ENERGY: WITHOUT THE HOT AIR <u>UIT</u> 2009 Available to download free of charge at: http://www.withouthotair.com/	DE.164
HM GOVT	2050 PATHWAYS ANALYSIS Report via DECC Publications http://www.decc.gov.uk/en/content/cms/tackling/2050/2050.aspx	

418 – Medical Physics [Dr RE Ansorge] Lent

ALLISY-ROBERTS, P J & WILLIAMS, J	FARR'S PHYSICS FOR MEDICAL IMAGING <u>Saunders</u> 2 nd edition 2008	DB.154
JOHNS H E & CUNNINGHAM J R	THE PHYSICS OF RADIOLOGY <u>Charles C Thomas</u> 4th edition 1983 (See particularly Chapters 2.8-2.11, 3, 4.1-4.5, 5, 6, 15.)	DB.161
WEBB S (ED.)	THE PHYSICS OF MEDICAL IMAGING <u>Taylor & Francis</u> 1988 (See particularly chapters 2, 3, 4, 6, 7 & 8.)	DB.159
SHARP P F, DENDY P P & KEYES W I	RADIONUCLIDE IMAGING TECHNIQUES <u>Academic Press</u> 1985 (See particularly chapters 2 & 3.	DB.165
MCDICKEN W N	DIAGNOSTIC ULTRASONICS; PRINCIPLES AND USE OF INSTRUMENTS <u>Churchill Livingstone</u> 3rd edition 1991 (Several chapters are relevant, but especially 3, 4, 8 & 11.)	DB.162
METCALF P, KRON T AND HOBAN P	THE PHYSICS OF RADIOTHERAPY X-RAYS FROM LINEAR ACCELERATORS <u>Medical Physics Publishing</u> 1997	DB.164
DENDY P P AND HEATON B	PHYSICS FOR DIAGNOSTIC RADIOLOGY <u>IoP Publishing</u> 2nd edition 1999	DB.155
BENDRIEM B AND TOWNSEND D W	THE THEORY AND PRACTICE OF 3D PET <u>Kluwer Academic</u> 1998	DB.160
MAISEY M N, WAHL R L AND BARRINGTON S F	ATLAS OF CLINICAL POSITRON EMISSION TOMOGRAPHY <u>Arnold</u> 1999 (Up-to-date coverage of the clinical applications of PET.)	FOLIO DB.163
HAACKE E M, BROWN R W, THOMPSON M R AND VENKATESAN R	MAGNETIC RESONANCE IMAGING: PHYSICAL PRINCIPLES AND SEQUENCE DESIGN <u>Wiley</u> 1999	Folio DB.153

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MCROBBIE D W, MOORE E A, GRAVES M J, PRINCE M R	MRI FROM PICTURE TO PROTON <u>CUP</u> 2 nd edition 2007	DB.156
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419 –Low Power Embedded Systems Programming [Dr I Wassell]

KERNIGHAN, B.W. & RITCHIE, D.M.	THE C PROGRAMMING LANGUAGE <u>Prentice Hall</u> 2 nd edition 1988 Useful websites: Atmel 8 bit avr micro controllers: http://www.atmel.com/products/avr/default.asp Atmel application notes for 8 bit avr: http://www.atmel.com/dyn/products/app_notes.asp?family_id=607 avr-libc library: http://www.nongnu.org/avr-libc/	EQP.195
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Group M: Multidisciplinary modules

4M1 - French- [Mr CD'Angelo] Lent : Material to be announced in lectures	
4M2 - German- [Mr M Kranert] Lent: Material to be announced in lectures	
4M3 - Spanish- [Mr AS Bianchi] Michaelmas : Material to be announced in lectures	
4M4 - Japanese – [Dr M Ashikari] Michaelmas : Material to be announced in lectures	

4M6 - Materials and Processes for Microsystems (MEMS) [Dr AJ Flewitt] Michaelmas

FLEWITT, P.E.J. & WILD, R.K.	PHYSICAL METHODS FOR MATERIALS CHARACTERISATION <u>IoP Publishing</u> 2 nd edition 2003	JA.187
GARDNER. J.W., VARADAN, V.K., AWADELKARIM, O.O.	MICROSENSORS, MEMS AND SMART DEVICES <u>Wiley</u> 2001	DM.10
GAURA, E. & NEWMAN, R.	SMART MEMS AND SENSOR SYSTEMS <u>Imperial College</u> 2006	DM.28
MADOU, M.J.	FUNDAMENTALS OF MICROFABRICATION <u>CRC Press</u> 2nd edition 2002	DM.8 Folio
SENTURIA, S.D.	MICROSYSTEM DESIGN <u>Kluwer</u> 2001	DM.2

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4M9 - Surveying Field Course [Mr AL Johnson] Summer Vacation between IIA and IIB		
*JOHNSON, A.L.	PLANE AND GEODETIC SURVEYING <u>Spon</u> 2004	GM.254
UREN, J. & PRICE, W.F.	SURVEYING FOR ENGINEERS <u>Palgrave Macmillian</u> 4th edition 2006	GM.255
<u>Geodesy</u>		
BOMFORD, G.	GEODESY <u>Clarendon Press</u> 4th edition 1980	GM.84
<u>GPS</u>		
KING, R.W., <i>et al.</i>	SURVEYING WITH GPS, <u>University of New South Wales</u> 1985	Pam. File 554
LEICK, A.	GPS SATELLITE SURVEYING <u>Wiley</u> 3 rd edition 2004	GM.256
<u>Least Squares Adjustment</u>		
COOPER, M.A.R.	FUNDAMENTALS OF SURVEY MEASUREMENT AND ANALYSIS <u>Crsoy, Lockwood, Staples</u> 1974	GM.153

4M12 - Partial Differential Equations & Variational Methods [Dr G Wells] Lent		
*JAMES, G. <i>et al.</i>	ADVANCED MODERN ENGINEERING MATHEMATICS <u>Pearson/Prentice Hall</u> 3 rd edition 2004	EA.180 (4 th ed. at EA.192)
*RILEY, K.F., HOBSON, M.P. & BENICE S.J.	MATHEMATICAL METHODS FOR PHYSICS AND ENGINEERING <u>Cambridge University Press</u> 3 rd edition 2006 Available as an ebook at: http://cco.cambridge.org/uid=17532/book?id=ccol0521861535_CCOL0521861535	EA.183
COURANT R. & HILBERT D.	METHODS OF MATEMATICAL PHYSICS Volumes 1 and 2 <u>Interscience</u> 1953-62 (1989 reprint)	EA.38 EE.40
GREENBERG, M.D.	ADVANCED ENGINEERING MATHEMATICS <u>Prentice Hall</u> 2 nd edition 1998	EA.162
JEFFREY, A.	APPLIED PARTIAL DIFFERENTIAL EQUATIONS: AN INTRODUCTION <u>Academic Press</u> 2002	EE.126

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4M13 - Complex Analysis & Optimisation [Prof N Fleck] Michaelmas		
*ANTONIOU A. & LU W-S	PRACTICAL OPTIMIZATION: ALGORITHMS AND ENGINEERING APPLICATIONS <u>Springer</u> 2007	ER.227
* JAMES, G. <i>et al.</i>	ADVANCED MODERN ENGINEERING MATHEMATICS <u>Pearson/Prentice Hall</u> 3 rd edition 2004	EA.180 (4 th ed. at EA.192)
*LUENBERGER, D.G.	LINEAR AND NON-LINEAR PROGRAMMING <u>Addison Wesley</u> 2 nd edition 1984	ER.142 (3 rd ed. at ER.239)
RILEY, K.F., HOBSON, M.P. & BENICE S.J.	MATHEMATICAL METHODS FOR PHYSICS AND ENGINEERING <u>Cambridge University Press</u> 3 rd edition 2006 Available as an ebook at: http://cco.cambridge.org/uid=17532/book?id=ccol0521861535_CC_OL0521861535	EA.183
GILL, P.E., MURRAY, W. & WRIGHT M.H.	PRACTICAL OPTIMIZATION <u>Academic Press</u> 1981	ER.115
GREENBERG, M.D.	ADVANCED ENGINEERING MATHEMATICS <u>Prentice Hall</u> 2 nd edition 1998	EA.162
PALIOURAS, J.D. & MEADOWS, D.S.	COMPLEX VARIABLES FOR SCIENTISTS AND ENGINEERS <u>Macmillan</u> 2 nd edition 1990	EI.75
4M14 - Sustainable Development [Prof PM Guthrie] Michaelmas		
*DRESNER, S.	THE PRINCIPLES OF SUSTAINABILITY <u>Earthscan</u> 2 nd edition 2008	DEE.128
*FENNER, R.A., AINGER, C.A., CRUICKSHANK, H.J. & GUTHRIE, P. (2006)	WIDENING HORIZONS FOR ENGINEERS: ADDRESSING THE COMPLEXITY OF SUSTAINABLE DEVELOPMENT <i>Proceedings of the Institution of Civil Engineers, Engineering sustainability, vol.159 (ES4), pp.145-154</i>	CUED Library or e journals
*FORUM FOR THE FUTURE (London)	THE ENGINEER OF THE 21 st CENTURY INQUIRY: CHANGE CHALLENGES FOR SUSTAINABILITY <u>Forum for the Future</u> 2000 Available from: http://www.forumforthefuture.org.uk/	ONLINE
*GUTHRIE, P. (Chairman) et al	GLOBAL WATER SECURITY: AN ENGINEERING PERSPECTIVE <u>Royal Academy of Engineering</u> 2010 Available online: http://www.raeng.org.uk/news/publications/list/reports/Global_Water_Security_report.pdf	Pam.File 919 (Library Office Reference)

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*UNITED NATIONS	THE MILLENNIUM DEVELOPMENT GOALS REPORT <u>United Nations</u> 2005 Available from: http://www.un.org/millenniumgoals/ (United Nations)	ONLINE
BARTLETT, H.V. & GUTHRIE, P. (2005)	GUIDES TO SUSTAINABLE BUILT ENVIRONMENT DESIGN <i>Proceedings of the Institution of Civil Engineers, Engineering sustainability, vol.158 (ES4), 2005, pp.185-195</i>	CUED Library or ejournals@ cambridge
FENNER, R.A., AINGER, C.M., CRUICKSHANK, H.J. & GUTHRIE, P. (2006)	WIDENING ENGINEERING HORIZONS: ADDRESSING THE COMPLEXITY OF SUSTAINABLE DEVELOPMENT <i>Proceedings of the Institution of Civil Engineers, Engineering sustainability, vol.159 (ES4), 2006, pp.145-154</i>	CUED Library or ejournals@ cambridge
FORUM FOR THE FUTURE (London)	THE ENGINEER OF THE 21 st CENTURY INQUIRY: ENGINEERS FOR SUSTAINABILITY <u>Forum for the Future</u> (2000) Available from: http://www.forumforthefuture.org.uk/	ONLINE
HACKING, T. & GUTHRIE, P. (2006)	SUSTAINABLE DEVELOPMENT OBJECTIVES IN IMPACT ASSESSMENT: WHY ARE THEY NEEDED AND WHERE DO THEY COME FROM? <i>Journal of environmental assessment policy and management, vol.8 (3), 2006, pp.341-371</i>	University Library or ejournals@ cambridge
HACKING, T. & GUTHRIE, P. (2008)	A FRAMEWORK FOR CLARIFYING THE MEANING OF TRIPLE BOTTOM-LINE, INTEGRATED AND SUSTAINABILITY ASSESSMENT <i>Environmental impact assessment review, vol.28 (2-3), 2008, pp.73-89</i>	ejournals@ cambridge
INSTITUTION OF CIVIL ENGINEERS	ENGINEERING WITHOUT FRONTIERS: INTERIM REPORT, ICE PRESENENTIAL COMMISSION 2004 Available from: http://www.sistech.co.uk/media/interim%20report.pdf (Scottish Institute of Sustainable Technology)	ONLINE
JOHNSTON, S.F. GOSTELOW, P.J. & KING, J.	ENGINEERING AND SOCIETY: THE ROLE OF PROFESSIONAL PRACTICE <u>Prentice Hall</u> 2000	DA.106
MACKAY, D.J.C.	SUSTAINABLE ENERGY: WITHOUT THE HOTAIR <u>UIT</u> 2009 (Available to download at: http://www.withouthotair.com/)	DE .64
MAWHINNEY, M.	SUSTAINABLE DEVELOPMENT: UNDERSTANDING THE GREEN DEBATES <u>Blackwell</u> 2002	DEE.118

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4M15 - Sustainable Energy [Dr S Scott] Lent		
*MEADOWS, D.H., MEADOWS, D.L. & RANDERS, J.	BEYOND THE LIMITS: GLOBAL COLLAPSE OR A SUSTAINABLE FUTURE. <u>Earthscan</u> 1992	DEE.74
BOYLE, G.	RENEWABLE ENERGY: POWER FOR A SUSTAINABLE FUTURE <u>Oxford University Press</u> 2 nd edition 2004	DE.158
HOUGHTON, J.	GLOBAL WARMING: THE COMPLETE BRIEFING <u>Cambridge University Press</u> 3 rd edition 2004 Available as an ebook at: http://www.myilibrary.com?id=74902 4th edition also available as an ebook at: http://lib.myilibrary.com/?id=246679	TX.109
MACKAY, D.J.C.	SUSTAINABLE ENERGY: WITHOUT THE HOTAIR <u>UIT</u> 2009 (Available to download at: http://www.withouthotair.com/)	DE.164
TESTER, J.W. <i>et al.</i>	SUSTAINABLE ENERGY: CHOOSING AMONG OPTIONS. <u>MIT Press</u> 2005	DE.156
QUASCHNING, V.	UNDERSTANDING RENEWABLE ENERGY SYSTEMS <u>Earthscan</u> 2005	DE.157

4M16 – Nuclear Power Engineering [Dr GT Parks] Lent		
*BENNET, D. J. & THOMSON, J. R.	ELEMENTS OF NUCLEAR POWER <u>Longman</u> 3rd edition 1989	XB.56
BENEDICT, M, PIGFORD, T.H. & LEVI H.W.	NUCLEAR CHEMICAL ENGINEERING <u>McGraw-Hill</u> 2 nd edition 1981	XC.79
GLASSTONE, S. & SESONSKE, A.	NUCLEAR REACTOR ENGINEERING VOLS 1-2 <u>Chapman & Hall</u> 4th edition 1991	XC.85-86
HARMS, A. A.	PRINCIPLES OF NUCLEAR SCIENCE AND ENGINEERING <u>RSP/Wiley</u> 1987	XA.28
MARTIN, A. & HARBISON, S. A.	INTRODUCTION TO RADIATION PROTECTION <u>Chapman & Hall</u> 4th edition 1996	XH.72

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GROUP R: RESEARCH MODULES (open to certain undergraduates)

5R1 - Stochastic Processes & Optimisation Methods [Dr GT Parks] Lent		
*SCHNEIDER, J.J. & KIRKPATRICK, S.	STOCHASTIC OPTIMIZATION <u>Springer</u> 2006	ER.228
AARTS, E. & KORST, J.	SIMULATED ANNEALING AND BOLTZMANN MACHINES <u>Wiley-Interscience</u> 1989	ER.179
GOLDBERG, D.E.	GENETIC ALGORITHMS IN SEARCH, OPTIMIZATION AND MACHINE LEARNING <u>Addison Wesley</u> 1989	ER.167
REEVES, C.R.	MODERN HEURISTIC TECHNIQUES FOR COMBINATORIAL PROBLEMS <u>McGraw-Hill</u> 1995	ER.199
HONERKAMP, J. & LINDENBERG, K.	STOCHASTIC DYNAMICAL SYSTEMS <u>Wiley-VCH</u> 1994	EP.307