

# Level 6 Graduate Diploma in Engineering (9210-01)



## Reading list

Civil Engineering

Electrical/Electronic Engineering

Mechanical Engineering

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September 2011  
Version 1.0

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## Reading list

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# 1 About this document

This document contains the recommended reading materials learners can refer to when studying for the Level 6 Graduate Diploma in Engineering (9210-01).

This document lists reading materials for the following units:

<b>City &amp; Guilds unit number</b>	<b>Title</b>
Unit 100	Engineering Mathematics
Unit 101	Management for Engineers
Unit 102	Mechanics of Solids and Basic Structural Analysis
Unit 103	Hydraulics and Hydrology
Unit 104	Engineering Surveying
Unit 105	Soil Mechanics and Engineering Geology
Unit 106	Building Engineering
Unit 107	Quantity Surveying
Unit 108	Highway Engineering
Unit 109	Irrigation Engineering
Unit 110	Water and Waste Engineering
Unit 111	Structural Analysis
Unit 112	Circuits and Waves
Unit 113	Electrical Machines and Electrical Energy System Fundamentals
Unit 114	Electrical Energy System
Unit 115	Electrical Machines and Drives
Unit 116	Electronics and Telecommunications
Unit 117	Electronic Systems
Unit 118	Communication Systems
Unit 119	Wireless and Mobile Communication
Unit 120	Computer Programming and Information Systems
Unit 121	Computer Networks
Unit 122	Web Design and Applications
Unit 123	Computer Architecture and Operating Systems
Unit 124	Database Management
Unit 125	Signals and Systems
Unit 126	Information Management
Unit 127	Software Engineering
Unit 128	Applied Thermodynamics
Unit 129	Fluid Mechanics

Unit 130	Mechanics of Machines and Strength of Materials
Unit 131	Materials
Unit 132	Manufacturing Technology
Unit 133	Analysis and Design of Manufacturing Technology
Unit 134	Hydraulics and Hydraulic Machines
Unit 135	Mechanics of Solids
Unit 136	Control Systems
Unit 137	Electro Techniques
Unit 138	Quality and Reliability Engineering



## 2 Recommended reading list for the Level 6 Graduate Diploma in Engineering (9210-01)

The reading materials are listed in the following format:

Title – Author(s) – Publisher – ISBN (where available)

### Unit 100 Engineering Mathematics

- Engineering Mathematics; John Bird; Elsevier Ltd.; 978-0-75-068555-9
- Advanced Engineering Mathematics: new edition of further engineering; Stroud K A , Booth, Dexter J; 2003; Palgrave Macmillan; 1403903123
- Advanced Engineering Mathematics; Bajpai A C; Mustoe L R; Walker D; 1977; John Wiley; 0471995207

### Unit 101 Management for Engineers

- Exploring Corporate Strategy: Text and Cases; Johnson; Scholes; Pearson Education; 0273687344
- Financial Accounting for Non-Specialists; Atrill; Peter; Prentice Hall; 0273655876
- Management and Organisational Behaviour; Mullins FT; Pitman; 0273688766
- The Essence of Business Economics; Parker; Pearson Education; 0135731305
- The Essentials of Project Management; Lock Gower; 0566082241
- Operations Management; Wild Continuum; 0826449271
- Principles of Marketing; Kotler; Saunders; Armstrong; Pearson; 0273684566

### Unit 102 Mechanics of Solids and Basic Structural Analysis

- Strength of materials for civil engineers; Megson T.H.G. Edward Arnold; 0340568291
- Strength of materials & structures; Case J.
- Fundamentals of structural analysis ; West; Harry H. ;John Wiley

Additional Reading

- Strength of materials; G.H.Ryder
- Elements of the theory of structures; Heyman; Jacques. : CUP;
- Basic structural theory; Heyman J.

## Unit 103 Hydraulics and Hydrology

- Civil Engineering hydraulics; Featherstone; Blackwell; 0632055146
- Engineering hydrology; Wilson EM; Macmillan; 0333517172
- Fluid Mechanics; Douglas; Gasiorek ; Prentice Hall ; 0582414768
- Fluid Mechanics with; Franzini; McGraw-Hill; 007112196X
- Engineering Applications; Finnemore
- Hydraulics in Civil and Chadwick; Spon Press; 0419225803
- Environmental Engineering; Morfett
- Hydrology in Practice; Shaw; Nelson Thornes
- Open Channel Hydraulics; French; McGraw-Hill; 0071133100
- Solving Problems in Fluid; Douglas; Longman; 0582239877
- Mechanics Volume 1; Matthews
- Solving Problems in Fluid; Douglas; Longman
- Mechanics Volume 2; Matthews
- Understanding Hydraulics; Hamill; Palgrave; 0333779061

## Unit 104 Engineering Surveying

- Surveying; Bannister; Raymond Baker; Longman Higher Education 0582302498
- Surveying for Engineers; Uren; Price Palgrave; 0333577051
- Engineering Surveying: Theory and Examination problems for Students; Schofield; Butterworth- Heinemann; 0750649879

### Additional Reading

- Engineering Surveying Technology; Kennie; Petrie; Blackie; 0216924820
- Maths for Map Makers; Allan Whittles; Publishing Services; 1870325915
- Surveying for Construction; Irvine; McGraw Hill; 0077079981
- Setting -Out Procedures; Sadgrove ; 0408028378

## Unit 105 Soil Mechanics and Engineering Geology

- Soil mechanics; SI version; John Lambe; T. William
- Basic soil mechanics; Milligan G.W.E.
- A Short course in geology for civil engineers; Matthews M.; Thomas Telford; 9780727733504
- Smith's Elements of Soil Mechanics [Paperback]; Ian Smith
- Geology for Engineers, Seventh Edition [Paperback]; F.G.H. Blyth, M H de Freitas
- Foundations of Engineering Geology; Tony Waltham

### Additional Reading

- Engineering properties of soils; Gulhati Shashi

- Introduction to soil mechanics laboratory testing; FRATTA; D.; CRC Press(Taylor & Francis Group); 9781420045628
- Engineering soil mechanics; Tuma; J. J.; Prentice-Hall; 0132795051

## **Unit 106 Building Engineering**

- Building construction handbook, 8th edition ; Chudley, R. and Greeno, R., (2010); Oxford, Butterworth-Heinemann
- Construction technology: Volume 1-House construction, 2nd edition; Riley, M. and Alison, R., (2008); Basingstoke: Palgrave Macmillan
- Teamwork and Project Management; Smith, Karl.A. (2004); McGraw Hill
- Project Management and leadership skills for engineering and construction projects; Benator, Barry (2003); Fairmont Press
- Building Services Engineering 5th Edition; Chadderton,D.V., (2007); London : Taylor & Francis, 2007
- Environmental Science in Building, 6th Edition; McMullan,R.,(2007); Basingstoke : Palgrave Macmillan, 2007
- Building services, technology and design; Greeno,R.,(1997);Longman ; Chartered Institute of Building, 1997

## **Unit 107 Quantity Surveying**

- Quantity surveying; Turner, Dennis F; George Godwin

### Additional Reading

- Building quantities explained; Seeley, Ivor H.; McMillan
- Measurement of construction work; Wilcox, Chris; George Godwin
- Estimating construction costs; Peurifoy, R.L.; McGraw-Hill
- Best practice tendering for design and build projects; Griffith, Alan; Thomas Telford

## **Unit 108 Highway Engineering**

- Traffic and Highway Engineering; Garber, Hoel; CL Engineering; 0495082503
- Principles of Traffic and Highway Engineering; Garber, Hoel; Cengage; 9788131512463
- Principles and Practice of Highway Engineering; Kadyali Khanna; Lal; 8174091653
- Highway Traffic Analysis and Design; Sater, Palgrave; Hounsell; 0333609034
- Road Engineering for Development; Robinson, Spon; Thagesen; 0415279488
- Handbook of Road Technology; Lay; Taylor & Francis
- Traffic Engineering and Transport Planning; Kadiyali; Khanna; 817409220X
- Highway and Soil Engineering; Vazirani Chandola; Khanna
- Transport Planning and Traffic Engineering; O'Flaherty; Elsevier; 9788131202784
- Highways: The Location, Design, Construction and Maintenance of Pavements; O'Flaherty; Elsevier; 9788131202777

## Unit 109 Irrigation Engineering

- Irrigation Engineering; Sharma; S. Chand; 8121921287
- Irrigation water, Management: Principles and Practice; Majumdar; PHI; 9788120317291
- Irrigation and Water, Resources Engineering; Asawa; Newage; 978812241673X
- Irrigation Engineering; Basak; Tata McGraw Hill; 978007463538X
- Irrigation and Water, Power Engineering; Punmia Laxmi; Lal; 978813180763X

## Unit 110 Water and Waste Engineering

- Water supply and sewerage; Steel McGhee; McGraw-Hill; 0070609292
- Wastewater Engineering, Treatment and Reuse; Eddy Metcalf; Tata McGraw-Hill; 0070495394
- Water Supply; Twort, Ratnayaka, Brandt; Arnold / IWA; 0340720182
- Twort's Water Supply; Ratnayaka, Brandt, Johnson; Elsevier; 9780750668439
- Environmental Engineering; Weiner, Matthews, Vesilind; Elsevier; 0750672943
- Unit Treatment Processes in Water and Wastewater Engineering; Casey, T.J. (1997); Chichester, New York: John Wiley
- Water Treatment: Principles and Design, 2nd edition; Crittenden, J.C., Trussel, R.R., Hand, D.W., Howe, K.J. (2005); Tchoganoglous, G., Hoboken, N.J.: J. Wiley
- Theory and Practice of Water and Wastewater Treatment; Droste, R. L. (1997).; New York, Chichester: Wiley
- Introduction to Environmental Engineering and Science; Masters, G. M. (1991); New Jersey; Prentice-Hall
- Principles of Water Quality Control, 5th edition; Tebbut, T.H.Y. (1998); Oxford: Butterworth Heinemann

## Unit 111 Structural Analysis

- Elements of theory of structures; Hayman
- Fundamentals of structural analysis; West H.H.
- Understanding Structures; Seward D; Macmillan, 2<sup>nd</sup> edition, 1999
- Structures: Theory and Analysis; Williams M, Todd J; Macmillan, 1st edition, 1999
- Structural Elements Design Manual; Draycott, T. (1991); Butterworth Heinemann Holmes, R. (1995)

### Additional Reading

- Students' structural handbook; Morgan W.
- Structural engineering handbook; Gaylord, Edwin H
- Foundation analysis & design; Bowel J.E.

## **Unit 112 Circuits and Waves**

- Classical Circuit Theory; Omar Wing; Springer; 978-0-387-097404,
- Electromagnetics, Second edition; Joseph A. Edminister; McGraw –Hill

## **Unit 113 Electrical Machines and Electrical Energy System Fundamentals**

- Fundamentals Of Electrical Machines; Mohd. Abdus Salam; Alpha Science International Limited, 2005; 1-84265 -275-3
- Electric Energy Systems Theory an Introduction, second edition; Olle I. Elgerd; McGraw Hill; 13-978-0-07-099286-3

## **Unit 114 Electrical Energy Systems**

- Power System Analysis; John J. Grainger, William D. Stevenson; McGraw-Hill; 0- 07-061293-5
- Electric Power Systems; Nasar, S.A.; McGraw-Hill; 0- 07-045917-7
- Protective Relaying Principles And Applications, Third Edition; J. Lewis Blackburn, Tomas J. Domin; CTC Press; 10-1-57744-716-5
- Hand Book of Electrical Power Calculations, Third edition; H. Wayne Beaty; McGraw-Hill; 0- 07-136298-3
- Alternative Energy Systems; B.K. Hodge. 2009; John Wiley and Sons;
- Electrical Power Transmission System Engineering; T. Gonen. 2009; CRC Press

## **Unit 115 Electrical Machines and Drives**

- Electric Machinery Fundamentals, Fourth Edition; Stephen J. Chapman; McGraw Hill, 2005; 0- 07-246523-9
- Electrical Machines And Drive Systems, Third Edition; John Hindmarsh, Alasdair Renfrew; Ad Maiorem Dei Gloriam
- Electric Machinery And Transformers, Third Edition; Bhag S. Guru, Huseyin R. Hiziroglu; Oxford University press
- Electric Motors and Drives - fundamentals, types and applications, Third Edition; Austin Hughes; ELSEVIER
- Theory And Problems Of Electrical Machines And Electromechanics, Second Edition; Syed A. Nasar; Mc Graw Hill

## **Unit 116 Electronics and Telecommunications**

- Communication systems: An introduction to signals and noise in electrical communication; Bruce Carlson; McGraw-Hill; 07-085082-2
- Communication Systems: Analogue and Digital; Singh & Sapre; McGraw-Hill; 07-063454-8
- Microelectronics: Digital and Analogue circuits and systems; Millman and Gabrel; McGraw-Hill; 07-463736-3

## **Unit 117 Electronic Systems**

- Microelectronics: Digital and Analogue circuits and systems; Millman and Gabrel; McGraw-Hill; 07-463736-3
- Digital Integrated Electronics; Taub and Schilling; McGraw-Hill; 07-026508-9
- Pulse, Digital and Switching waveforms; Millman, Taub and Prakash Rao; McGraw-Hill; 07-063463-7
- Digital Design; Morris Mano; Prentice Hall; 10: 0130621218
- Microelectronic Circuits Fifth Edition; Adel S. Sedra and K. C. Smith; 0195142527
- Integrated Electronics: Analogue and Digital Circuits and Systems, J. Millman; 0070854939

## **Unit 118 Communication Systems**

- Digital Communications Glover; Grant Prentice-Hall; 0130893994
- Telecommunication switching, Traffic and Networks, Flood; Pearson Education; 0130893994
- Transmissions Systems Flood; Cochrane Peregrinus; 0863413102
- Communication Systems; Carlson; McGraw Hill; 007009960
- Modern Digital and Analogue Communication Systems; Lathi; Oxford University Press; 0195110099
- Introduction to Communication Systems; Stremler; Addison Wesley; 0201516519
- Digital Communication; Sklar; Prentice Hall; 0130847887

## **Unit 119 Wireless and Mobile Communications**

- Wireless Communications: Principles and Practice; Theodore S Rappaport; Prentice-Hall; 81-203-2381-5
- Mobile Cellular Telecommunications Systems; Lee W Y C; McGraw-Hill
- Wireless Communication Technology; R Blake; Thomas Delmar

## **Unit 120 Computer Programming and Information Systems**

- Programme Design; Peter Juliff; Prentice Hall; 81-203-1622-3
- Ivor Horton's Beginning; JavaTM2, JDKTM5, Wiley India, Ltd, 81-265-0570-2

## **Unit 121 Computer Networks**

- Computer Networks; Andrew S Tanenbaum; Pearson Education Ltd; 0-13-066102-3
- Computer networking: a top-down approach; James F Kuross & Keith W Ross; Pearson Education Ltd; 81-7758-878-8

## **Unit 122 Web Design and Applications**

- Internet and www student manual
- HTML, CSS, JavaScript, Perl, Python, and PHP web standards programmer's reference; Steven M Schafer; Wiley Publishing Inc.; 81-265-0620-2
- PHP for the Web, Visual QuickStart Guide (4th edition, 2011); Ullman L
- CSS DHTML & AJAX: Cranford Teague J, Visual QuickStart Guide.
- Learning XML: Ray Eric T, O'Reilly

## **Unit 123 Computer Architecture and Operating Systems**

- Computer Organization and Architecture; Linda Null & Julia Lobur; Jones and Bartlett;
- Operating Systems: Internals and Design Principles; William Stallings; Prentice Hall; 10: 0130319996
- Operating systems: design and implementation; Andrew S. Tanenbaum; Prentice-Hall;
- C Programming in Easy Steps, Mike McGrath; 10: 9781840783636

## **Unit 124 Database Management**

- Fundamentals of database systems; R Elmasri & S B Navathe; Addison-Wesley;
- Database system concepts; A Silberschatz, H F Korth & S Sudarshna, McGraw-Hill,
- Fundamentals of database systems; R Elmasri, S B Navathe, Somayajulu and Gupta; Pearson Education;
- Database Systems (5th edition); Connolly & Begg; Addison-Wesley; 0321523067
- Database Solutions (2nd edition); Connolly & Begg; Addison-Wesley; 0321173503.
- Database System Concepts (6th edition); Alvi Silberschatz, Henry F. Korth, S. Sudarshan; McGraw-Hill; 0071289593
- Fundamentals of Database Systems (6th edition); R. Elmasri, Shamkant B. Navathe; Addison-Wesley; 0136086209

## Unit 125 Signals and Systems

- Electronic Signals and Systems; Paul A Lynn; Macmillan Education Ltd.; 0 333 47289 6
- Control Systems Engineering 5th Edition; Nise, Norman S. (2008)
- An Introduction to the Analysis & Processing of Signals; Lynn, Paul A. (1989)

## Unit 126 Information Management

- Principles of Information Systems; Stair R & Reynolds G; Thomas course Technology
- Introduction to Information systems; O'Brien J; McGraw-Hill

## Unit 127 Software Engineering

- Software Engineering; Ian Sommerville; Addison-Wesley;
- Software engineering: A practitioner's approach; Roger S Pressman; McGraw-Hill

## Unit 128 Applied Thermodynamics

- Engineering Thermodynamics: Work and Heat Transfer (4th Edition); G.F.C. Rogers and Yon Mayhew; Longman; 0582053765
- Thermodynamic and Transport Properties of Fluids; S I Units Rogers; Mayhew Blackwell; 0631197036
- Applied Thermodynamics for Engineering Technologists; Eastop & McConkey, Longman; 0582091934
- Thermodynamics: An Engineering Approach; Yunus A. Cengel, and Michael A. Boles; McGraw-Hill; 0071250840

Additional Reading:

- Mechanical engineering thermodynamics: a laboratory course; Plint, M.A and Boswirth, L. Charles; Griffin & Co. London; 0852642768
- A Textbook of engineering thermodynamics; Khurmi, R.S. , S. Chand , New Delhi

## Unit 129 Fluid Mechanics

- Engineering Fluid Mechanics; Robertson & Crowe; Wiley; 0471173061
- Fluid Mechanics; Streeter, Wylie & Bedford; McGraw Hill; 0070665788
- Introduction to Fluid Mechanics; Fox, McDonald; Wiley; 0471124648
- Fundamental Mechanics of Fluids 3E, Iain G. Currie, Marcel Dekker



Additional Reading:

- Solving Problems in Fluid Mechanics Vol. 1; Douglas, Matthews; Longman Higher Education; 0582239877
- Solving Problems in Fluid Mechanics Vol. 2; Douglas, Matthews; Longman Higher Education; 0582239885
- Fluid Mechanics; White; McGraw Hill; 0071168486

### **Unit 130 Mechanics of Machines and Strength of Materials**

- Theory of Machine; S S Rattan
- Mechanics of Machines; G H Ryder, M D Bennet
- Strength of Materials; R.S. Khurmi
- Strength of Materials, DR Malhotra, Satya Prakashan; Delhi
- Strength of Materials; Dr. Sadhu Singh
- Mechanics of Materials, 8<sup>th</sup> Edition; R.C. Hibbeler; Prentice Hall/Pearson; 9789810685096
- Mechanical Vibrations, 2<sup>nd</sup> Edition; F.S. Tse, I.E. Morse, R.T. Hinkle; Allyn and Bacon Inc.
- Machines & Mechanisms, 3<sup>rd</sup> Edition, D. H. Myszka; Prentice Hall
- Mechanics of Materials, 3<sup>rd</sup> Edition; F. P. Beer, E. R. Johnston; McGraw-Hill

### **Unit 131 Materials**

- Engineering Materials, Vol 1, An Introduction to their Properties and Applications; Ashby, Jones, Butterworth; Heinemann; 0750630817
- Engineering Materials, Vol 2, An Introduction to Microstructures, Processing and Design; Ashby, Jones, Butterworth; Heinemann; 0750640197
- Elements of Materials Science and Engineering; Van Vlack, Addison; Wesley, 0201093146
- Materials Science and Engineering; Callister; John Wiley; 0471320137
- Manufacturing with Materials; Edwards, Endean; Butterworth-Heinemann; 0750627549
- Materials, Principles and Practice; Newey, Weaver; Butterworth-Heinemann; 0750603909

Additional Reading:

- Introduction to Composite Materials; Hull, Clyne; Cambridge University; 0521388554
- Plastics; Mills, Butterworth-Heinemann; 0340560436
- Selection and Use of Engineering Materials; Crane, Charles; Butterworth-Heinemann; 0750615494

## **Unit 132 Manufacturing Technology**

- Production Technology; Er. R.K. Jain
- CNC Programming: Principles and Applications; Michael W. Mattson
- Computer Numerical Control for Machining; Michael Lynch

## **Unit 133 Analysis and Design of Manufacturing Technology**

- Automation, Production Systems and Computer Integrated; Groover; Longman; HE 0130889784
- Manufacturing Strategy; Terry Hill; Palgrave; 0333762223
- Production and Operations Management; Muhlemann, Oakland, Locklear; Prentice Hall; 0273032356

## **Unit 134 Hydraulics and Hydraulic Machines**

- Mechanics of Engineering Materials; Benham, Crawford, Armstrong; Pearson Higher Education; 0582251648
- Engineering Fluid Mechanics and Hydraulic Machines; K.C. Patra; Alpha Science International Ltd; 1842655345

Additional Reading:

- Mechanics of Materials; Gere, Adin; Nelson Thornes; 0748769897
- Mechanics of Solids and Structures DWA; Rees; World Scientific Pub Co.; 1860942172

## **Unit 135 Mechanics of Solids**

- Mechanics of Engineering Materials; Benham, Crawford, Armstrong; Pearson Higher Education; 0582251648
- Mechanics of Materials, 8<sup>th</sup> Edition; R.C. Hibbeler; Prentice Hall/Pearson; 9789810685096
- Mechanics of Materials, 7<sup>th</sup> Edition, SI Edition; J. M. Gere, B. J. Goodno; CENGAGE Learning; 9780495438076
- Mechanics of Materials, 3<sup>rd</sup> Edition; F. P. Beer, E. R. Johnston; McGraw-Hill

Additional Reading:

- Mechanics of Materials Gere, Adin; Nelson Thornes; 0748769897
- Mechanics of Solids and Structures DWA; Rees; World Scientific Pub Co.; 1860942172

## **Unit 136 Control Systems**

- Control Engineering; Bissell, Nelson Thornes - 0412577100
- Control Systems Engineering; Nise; John Wiley; 0471366013

Additional Reading:

- Modern control engineering, 2nd edition; Ogata, Katsuhiko; Englewood Cliffs Prentice Hall; 0135891280
- Introduction to control systems, 3rd edition; Anand, D.K. & Zmood, R.B.; Oxford, Butterworth-Heinemann; 0750622989

## **Unit 137 Electro Techniques**

- Electronic and Electrical Engineering; Warnes Palgrave; Macmillan; 0333743113
- Electric Motors and Drives; Hughes; Newnes; 0750617411
- Power Electronic Control of AC Motors Murphy; Turnbull; Pergamon Press; 0080226833

Additional Reading:

- Basic Electrical Power & Machines Bradley; Kluwer; Academic Pubs.; 0412455404
- Electrical Machines and Drives; Slemon; Pergamon Press 201578859
- Power Electronics; Mohan, Undeland, Robbins; John Wiley; 0471584088

## **Unit 138 Quality and Reliability Engineering**

- Practical Reliability Engineering; O'Connor; John Wiley; 0470844639
- Reliability Engineering: Theory and Practice; Alessandro Biorlini
- Total Quality Management; Oakland; Butterworth-Heinemann; 0750609931
- Metrology for Engineers; Gayler; Shotbolt; 0304306126
- Practical Approach to Quality Control; Caplen; Random House; 0091735815
- Statistical Methods for Quality Improvement; Ryan; John Wiley; 0471197750
- Quality Management for Software; Daily; Blackwell NCC; 1855540827

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