

# Level 7 Post Graduate Diploma in Engineering (9210-02)



## Reading list

Civil Engineering

Electrical/Electronic Engineering

Mechanical Engineering

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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 7 Post Graduate Diploma in Engineering (9210-02).

This document lists reading materials for the following units:

<b>City &amp; Guilds unit number</b>	<b>Title</b>
Unit 111	Structural Analysis
Unit 138	Quality and Reliability Engineering
Unit 200	Engineering Analysis
Unit 201	Construction Engineering and Management
Unit 202	Environmental Engineering
Unit 203	Computational Mechanics Using Finite Element Method
Unit 204	Geotechnical Engineering
Unit 205	Built Environment 1
Unit 206	Structural Design
Unit 207	Fluid Mechanics and Coastal Engineering
Unit 208	Built Environment 2
Unit 209	Power System Economics and Planning
Unit 210	High Voltage Engineering
Unit 211	Fields and Network Theory
Unit 212	Data Communication
Unit 213	Digital System Design
Unit 214	Telecommunication Systems Engineering
Unit 215	Modern Control Systems
Unit 216	RF and Microwave Engineering
Unit 217	Power Electronics
Unit 218	Internet Technologies
Unit 219	Computer System Engineering
Unit 220	Computational Mechanics Using FEM
Unit 221	Heat and Mass Transfer
Unit 222	Mechanical Engineering Design
Unit 223	Mechatronics
Unit 224	Dynamics of Mechanical Systems
Unit 225	Advanced Manufacturing Technology
Unit 226	Design and Operation of Marine Vehicles
Unit 227	Automobile Engineering
Unit 228	Aerospace Engineering

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## 2 Recommended reading list for the Level 7 Post Graduate Diploma in Engineering (9210-02)

The reading materials are listed in the following format:

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

### 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 and design; Bowel J.E.

### Unit 138 Quality and Reliability Engineering

- Practical Reliability Engineering; O'Connor; John Wiley; 0470844639
- Reliability Engineering: Theory and Practice; Alessandro Birolini
- 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

### Unit 200 Engineering Analysis

- Advanced Engineering Mathematics; Erwin Kreyszig; John Wiley and Sons; 0470119160
- Advanced Modern Engineering Mathematics; Glyn James, David Burley; Addison Wesley; 0201565196

### Unit 201 Construction Engineering and Management

- Civil Engineering Construction Design and Management; Warren, Dene R
- Construction methods and Management; Nunnally SW

#### Additional Reading

- Heavy construction-planning, equipment and methods; Singh, Jagman; A. A. Balkema,
- Civil engineering building practice; Singh, Suraj
- Civil Engineering management; Wakhulu ON

### **Unit 202 Environmental Engineering**

- Principles of environmental engineering and science; Davis Masten; McGraw-Hill
- Introduction to Environmental Engineering and Science; Masters; Prentice-Hall

### **Unit 203 Computational Mechanics using Finite Element Method**

- Computational methods for transient analysis; Belytzchko Ted
- Computational Statistical Mechanics; Hoover Wm G

#### Additional Reading

- Boundary element methods in engineering; Brebbia CA
- Finite Element Methods; Superconvergence; Krizeg M

### **Unit 204 Geotechnical Engineering**

- Foundation analysis and design; Bowles; McGraw Hill; 0079122477
- Principles of foundation Engineering; Das; PWS; 0534954030

### **Unit 205 Built Environment 1**

- Building Services Engineering; Chadderton; Spon Press; 0415315352
- Heat and mass transfer in Building Services Design; Moss; Spon Press; 0419226508
- Engineering principals of Industrial Ventilation; RJ John Wiley; 0471637033
- Fire from first principles; Abrahams; Spoon Press; 0419152806
- Lamps and Lighting; Marsden; Butterworth-Heinemann; 0340646187

#### Additional Reading

- Thermal Comfort; Humphreys; MA Building Research

## **Unit 206 Structural Design**

- Design of structural elements: Concrete, Steelwork, Masonry and timber Designs to British Standards and Eurocodes; Chanakya Arya
- Principles of Structural Design: Wood, Steel and concrete; Ram S, Gupta

### Additional Reading

- Steel designers' manual; Owens, Graham W., 2<sup>nd</sup> edition; Blackwell Science Pub.
- Concrete construction handbook; Waddell, Joseph J.; McGraw-Hill
- Concrete manual; CBS Pub
- Foundation design simply explained; Faber J.

## **Unit 207 Fluid Mechanics and Coastal Engineering**

- Hydraulics in Civil and; Chadwick; Spon Press
- Environmental Engineering; Morfett
- Basic Coastal Engineering; Sorensen; Springer; 0387233326; 9780387233321
- Introduction to Nearshore; Svendsen; World scientific; 9789812561428
- Hydrodynamics; Imperial press; 9789812562043

## **Unit 208 Built Environment 2**

- Building Services Engineering; Chadderton; Spon Press; 0415315352
- Heat and mass transfer in Building Services Design; Moss; Spon Press; 0419226508
- Engineering Principals of Industrial Ventilation; RJ John Wiley; 0471637033
- Fire from first principles; Abrahams; Spoon Press; 0419152806
- Lamps and Lighting; Marsden; Butterworth-Heinemann; 0340646187

### Additional Reading

- Thermal Comfort; Humphreys; MA Building Research

## **Unit 209 Power System Economics and Planning**

- Modern Power System Planning; X. Wang, J. R. McDonald; McGraw- Hill Publishing; 0-07-707414-9
- Generation of Electrical Energy; Gupta BR; S. Chand Group Publications; 812190122
- Electrical Economics and Planning; T.W. Berrie; Peter Peregrinus Ltd; 0863412823
- Electrical Power Distribution; Publa A; McGraw Hill Publishing Company Ltd; 0071447830

## **Unit 210 High Voltage Engineering**

- High Voltage Engineering -3rd edition; M.S. Naidu, V. Kamaraju; TMH Publications, e-book
- High Voltage Engineering Fundamentals; E. Kuffel, W.S. Zaengl, J. Kuffel; 0750636343

## **Unit 211 Fields and Network Theory**

- Network Theory : Analysis and synthesis; Samarajith Gosh; Prentice –Hall of India Private Ltd; 81-203-2638-5, 2005
- Network Analysis; Van Valkenbury; Prentice Hall of India Pvt Ltd; e-book
- Electromagnetics; John Kraus; McGraw-Hill; 0-07-035621-1

## **Unit 212 Data Communication**

- Data Communications and Networking (4th Edition); Behrouz A. Forouzan; McGraw Hill; 0-07-296775-7
- Data Communications, Computer Networks and Open Systems (3rd Edition); Halsall Fred; Addison-Wesley Publishing Company; 0201565064
- Computer Networks; Andrews S.Tannenbaum; Pearson Education; 0-13-066102-3
- ISDN and Broadband ISDN with Frame Relay and ATM (4th Edition); Stallings William; Prentice Hall International, Inc.; 0139737448

## **Unit 213 Digital System Design**

- Digital Design; M Morris Mano, Michael D Ciletti; Prentice Hall; 0131989243
- Digital Design; Frank Vahid; Wiley, John and Sons; 0471467847

## **Unit 214 Telecommunication Systems Engineering**

- Analog and Digital Communication Systems (4th Edition); Martin S. Roden; Prentice Hall; 0133720462
- Digital Communications; Peter Grant and Ian Glover; Prentice Hall; 13-9780135653913

## **Unit 215 Modern Control Systems**

- Modern Control Systems; Dorf R and Bishop R; Pearson Education Inc.; 0132270285
- Modern Control Engineering; Katsuhiko Ogata; Prentice Hall; 013656738; 9780132270281

## **Unit 216 RF and Microwave Engineering**

- Electromagnetic Field Theory Fundamentals; Guru and Hiziroglu; 0521116023
- Telecommunications Engineering; Dunlop and Smith; 0748740449
- Microwave Technology; Dennis Roddy; Prentice Hall; 0835943909;
- Microwave Devices and Circuits; Samuel Y Liao; Prentice Hall; 81-203-0699-6
- Antenna Theory: Analysis and Design; C A Balanis; John Wiley and Sons; 9971-51-233-5

## **Unit 217 Power Electronics**

- Power Electronics: Circuits, Devices and Applications; Muhammad H. Rashid; Prentice Hal; 0131011405
- Power Electronics: Converters, Applications, and Design; Ned Mohan, Tore M, William P Robbins; Wiley, John and Sons, Incorporate; 0471226939

## **Unit 218 Internet Technologies**

- The Internet – Illustrated Introductory (3rd edition); Perry J et al.; Course Technology; 0760061580
- Web Programming: Building internet applications (3rd edition); Bates C; John Wiley and Sons Inc; 0470017759
- Web security, Privacy and Commerce (2nd edition); Garfinkel S, Spafford G; O'Reilly UK; 0596000456
- PHP for the World Wide Web; Ullman L; Visual QuickStart Guide; March 2011
- Applied Cryptography: Protocols, Algorithms and Source Code in C; Schneier B; John Wiley and Sons Inc ; 0471117099
- Secrets and Lies: Digital Security in a Networked World; Schneier B; John Wiley and Sons Inc; 0471253111

## **Unit 219 Computer System Engineering**

- 3D Computer Graphics; Watt; Addison Wesley; 0201398559
- ARM System-on-Chip Architecture; Furber; Addison Wesley; 0201675196
- Asynchronous Circuit Design; Myers; John Wiley and Sons Inc; 047141543X
- Asynchronous Digital Circuit Design; Birtwhistle, Davis; Springer-Verlag Berlin; 3540199012
- Computer Architecture: A Quantitative Approach; Hennessy, Patterson; Morgan Kaufmann; 1558603298
- Image Processing, Analysis and Machine Vision; Sonka et al; PWS Publishing; 053495393x
- Mobile Robotics: A Practical Introduction; Springer-Verlag UK; 1852331739
- Multiprocessor Methods for Computer Graphics Rendering; Whitman; Jones and Bartlett; 0867202297

## **Unit 220 Computational Mechanics Using FEM**

- Introduction to Finite Elements in Engineering; Chandrupatla TR, Belegundu AD; Prentice Hall; 0131784536
- Finite Element Modelling for Stress Analysis; Cook RD; John Wiley and Sons Inc; 0471107743
- The Finite Element Method, A Practical Course; Liu GR, Quek SS; Butterworth-Heinemann; 0750658665

### Additional Reading

- Finite Elements in Solids and Structure; Astley RJ Kluwer; Academic; 0412441608
- An Introductory Guide to Finite Element Analysis; Becker AA; Professional Engineering; 1860584101
- Solutions Manual for the Analytical Problems; Cook RD; John Wiley and Sons Inc; 0471111473
- Applied Numerical Analysis Gerald CF; Wheatley PO; Addison-Wesley; 0201474352

## **Unit 221 Heat and Mass Transfer**

- Chemical Engineering: Fluid Flow, Heat Transfer and Mass Transfer v.1; Coulson, Richardson; Butterworth – Heinemann; 0750644443
- Problems in Heat and Mass Transfer; Backhurst, J.R., Harker, J.H., Porter; J.E. Edward Arnold; 0713133279
- Fundamentals of Heat and Mass Transfer, Incroperal; Frank P., Dewitt, David P.; John Wiley; 047130460

### Additional Reading

- Transport Phenomena; Beek, Mutzall and Van Heuven; John Wiley; 0471999903
- Engineering Calculations in Radiative Heat Transfer; Gray, Muller; Pergamon Press; 0080177867

## **Unit 222 Mechanical Engineering Design**

- Machine Design an Integrated Approach by Robert L. Norton
- Machine Design by P.C. Sharma and D.K Aggarwal
- Fundamentals of Machine Component Design by Robert B. Juvinall
- Shigley's Mechanical Engineering; Design, Richard Budynas, Keith Nisbett; McGraw Hill
- Standard Handbook of Machine Design; Joseph Shigley, Charles Mischke; McGraw Hill

### Additional Reading

- Viscosity Variations of Oils with Temperature; E.W. Dean and G.H.B. Davis
- Theory and practice of Lubrication for Engineers; D.D. Fuller

## Unit 223 Mechatronics

- Mechatronics – Electronic Control Systems in Mechanical and Electrical Engineering; W Bolton
- Mechatronics: An Integrated Approach [Hardcover]; Clarence W. De Silva
- Mechatronics: Principles and Applications; Godfrey Onwubolu

### Additional Reading

- Mechatronic systems: fundamentals; Rolf Isermann
- The Mechatronics handbook; Robert H. Bishop; ISA--The Instrumentation, Systems, and Automation Society
- Mechatronics in Engineering Design and Product Development; Dobrivoje Popović, Ljubo Vlačić

## Unit 224 Dynamics of Mechanical Systems

- Theory of Machine; S S Rattan
- Mechanics of Machines; G H Ryder, M D Bennet
- Engineering Mechanics Statics and Dynamics; Irving H Shames
- Solution of Problems of Mechanics of Machines Volume I; Anvoner
- Digital Control Systems: Design, Identification and Implementation
- Modern Control Systems Solution manual; Richard C Dorf and Robert H Bishop
- Modern Control System Theory and Design; Stanley M. Shinnars
- Mechanical Vibrations, 4<sup>th</sup> Edition, S.S. Rao; Prentice Hall
- Modern Control Engineering, 5th Edition; Katsuhiko Ogata; Prentice Hall; 9780136156734

## Unit 225 Advanced Manufacturing Technology

- Automation, Production Systems and Computer Integrated Manufacturing; Groover; US Import and PHIPES; 0130546100
- Design for Manufacturing and Assembly: Concepts, Architectures; Kluwer; Academic Publishers Chapman, Hall; 0412781905
- Metal Cutting and High Speed Machining; Dudzinski, Molinari, Schulz, Kluwer, Academic/Plenum; 0306467259
- Rapid Prototyping and Manufacturing: Fundamentals of Stereo Lithography; Jacobs, P.; Society of Manufacturing Engineers; 0872634256
- Manufacturing Engineering and Technology; Serope Kalpakjian and Steven Schmid; Pearson; 978 981 068144 9

### Additional Reading

- Laser Metrology and Machine Performance: VI; Ford; DG WIT Press; 1853129909
- Materials and Processes in Manufacturing; DeGarmo; John Wiley; 0471429449

## Unit 226 Design and Operation of Marine Vehicles

- Basic Ship Theory, Vol. 1; Rawson and Tupper; Butterworth-Heinemann; 0750653965
- Basic Ship Theory, Vol. 2; Rawson and Tupper; Butterworth-Heinemann; 0750653973
- Introduction to Naval Architecture; Tupper; Butterworth-Heinemann; 0750625295
- Principles of Naval Architecture, Vol. 1; Lewis (Ed.); SNAME; 0939773007
- Principles of Naval Architecture, Vol. 2; Lewis (Ed.); SNAME; 0939773015
- Principles of Naval Architecture, Vol. 3; Lewis (Ed.); SNAME; 0939773023
- Ship Design and Construction, Vol.1; Lamb (Ed.); The Society of Naval Architects; 0939773406
- Ship Design and Construction, Vol.2; Lamb (Ed.); The Society of Naval Architects; 0939773414
- Marine Engineering; Harrington (Ed.); SNAME; 0939773104

### Additional Reading

- Ship Design for Efficiency and Economy; Schneekluth, Bertram; Butterworth-Heinemann; 0750641339
- Elements of Shipping Branch; Nelson; Thornes; 0412604604

## Unit 227 Automobile Engineering

- Advanced Vehicle Technology; Heinz Heisler
- The Motor Vehicle; T.K.Garrett, K. Newtona, W. Steeds
- Understanding Automotive Electronics; William Ribbens
- Diagnosis and Troubleshooting of Automotive Electrical, Electronic, and Computer Systems; James D. Halderman

## Unit 228 Aerospace Engineering

- Airplane Performance, Stability and Control; Perkins, C. D., and Hage, R, E.; Wiley Toppan, 1974
- Aircraft Stability and Response; Babister, A.W.; Pergamon Press, 1980
- Gas Turbines and Jet and Rocket Propulsion; Mathur, M., and Sharma, R. P.; Standard Publishers, New Delhi, 1988
- Aerothermodynamics of Gas Turbine and Rocket Propulsion; Gorden, C. V.; AIAA Education Series, New York, 1986

### Additional Reading

- Aerodynamics, Aeronautics and Flight Mechanics; McCormik, B. W.; John Wiley, 1995
- Flight Stability and Automatic Control; Nelson, R.C.; McGraw Hill, 1989
- Rocket Propulsion Elements; Sutton, G. P.; John Wiley and Sons Inc., New York, 5th Edn., 1993



- Gas Turbine Theory; Cohen, H., Rogers, G. F. C. and Saravanamuttoo, H.I.H.; Longman Co., ELBS Ed., 1989
- Aircraft Engine Design; Mattingly, J.D., Heiser, W. H., and Pratt, D. T.; AIAA Education Series, New York, 2002

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