

M.Tech (COMPUTER SCIENCE AND ENGINEERING)

CO 501 ADVANCED DATABASE MANAGEMENT SYSTEMS

Text Books:

1. Elmarsi, Navathe, Somayajulu, Gupta, "Fundamentals of Database Systems",
2. Edition, Pearson Education, 2007.
3. Garcia, Ullman, Widom, "Database Systems, The complete book", Pearson.

Text Books:

1. Date, Kannan, Swaminathan, "An Introduction to Database Systems", 8th Edition Pearson Education, 2007.
2. Silberschatz, Korth, Sudarshan, "Database System Concepts", Mcgraw Hill, 6th Edition, 2006

Text Books:

1. Ivar Jacobson, Grady Booch, James Rumbaugh, "The Unified Software Development Process", Pearson Education.
2. Yourdon, "Modern Structured Analysis", PHI.
1. K.K Aggarwal and Yogesh Singh, "Software Engineering", New Age Publications, 2009.

CO 502 PARALLEL COMPUTER ARCHITECTURE

Text Books:

1. Kai Hwang, "Advanced computer architecture"; TMH.
2. D. A. Patterson and J. L. Hennessey, "Computer organization and design".
3. J.P.Hayes, "computer Architecture and organization"; MGH.

Text Books:

1. Harvey G.Cragon,"Memory System and Pipelined processors", Narosa Publication.
2. V.Rajaraman & C.S.R.Murthy, "Parallel computer"; PHI.
3. R.K.Ghose, Rajan Moona & Phalguni Gupta, "Foundation of Parallel Processing", Narosa Publications.
4. Kai Hwang and Zu, "Scalable Parallel Computers Architecture", MGH.
5. Stalling W, "Computer Organisation & Architecture", and PHI.

CO 503 DATA STRUCTURES AND ALGORITHMS

Text Books:

1. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, "Introduction to Algorithms", MIT Press.
2. Ellis Horowitz, Sartaj Sahni Sanguthevar Rajasekaran, "The Design and Analysis of Computer Algorithms".
3. Aho, Hopcraft & Ulman, The Design and Analysis of Computer algorithms", Addison Wesley.
4. Tannenbaum, "Data Structures", PHI

Reference Books:

1. R.E. Tarjan, "Data Structures and Network algorithms", SIAM Regional Conference series in applied mathematics..
2. Rajeev Motwani and Prabhakar Raghavan, "Randomized Algorithms", Cambridge University Press.
3. Dexter C. Kozan, "The Design & Analysis of Algorithms", Springer-Verlag.
4. Narsingh Deo-Graph Theory with Application to Engineering and Computer Science,Prentice Hall of India.

CO 551 DISTRIBUTED SYSTEM**Text Books:**

1. P.K.Sihna, "Distributed Operating Systems: Concepts and Design", PHI.
2. Andrew S. Taenbaum and Maarten Van Steen, "Distributed Systems: Principles and Paradigms", Prentice Hall.
3. R. Chow, T. Johnson. Addison, "Distributed Operating Systems and Algorithms", Wesley Publishing Company.

Text Books:

1. Coulouris, G, Dollimore, J., and Kindberg, T., "Distributed Systems: Concepts and Design", Addison-Wesley.

CO 552 COMPUTER NETWORKS**Text Books:**

1. Behrouz A. Forouzan, "TCP/IP Protocol Suit", TMH, 2000.
2. Tananbaum A. S., "Computer Networks", 3rd Ed., PHI, 1999.
3. Black U, "Computer Networks-Protocols, Standards and Interfaces", PHI, 1996.

Text Books:

4. Stallings W., "Data and Computer Communications", 6th Ed., PHI, 2002.
5. Stallings W., "SNMP, SNMPv2, SNMPv3, RMON 1 & 2", 3rd Ed., Addison Wesley, 1999.
6. Laurra Chappell (Ed), "Introduction to Cisco Router Configuration", Techmedia, 1999.
7. Peterson and Davie. Computer Networks (2nd Edition), Morgan Kaufmann Publishers, 1999.
8. Internetworking with TCP/IP Vol.1: Principles, Protocols, and Architecture (4th Edition), Douglas Comer.

CO 601 INFORMATION AND NETWORK SECURITY**Text Books:**

1. "Cryptography and Network Security", William Stallings, Third Edition, PHI
2. "Basic Methods of Cryptography", Jan C A, Cambridge University Press.
3. "Information Security Intelligence: Cryptographic Principles & Applications", Thomas Calabrese, Thomson Learning.

Reference Books:

1. "Modern Cryptography: Theory and Practice", Wenbo Mao, Pearson Education.
2. "Cryptography and Data Security", Dorothy Elizabeth Robling Denning, Addison Wesley.

First Year M.Tech.(CSE) II Semester**OBJECT ORIENTED SOFTWARE ENGINEERING****Text Books:**

1. R . S. Pressman, "Software Engineering – A practitioner's approach", 5th Ed., McGraw Hill Int. Ed., 2001.
2. Jacobson, I, M. Christerson, P. Jonsson, G. Overgaard, "Object Oriented Software Engineering", 2nd Edition, Pearson Education, 2007.
3. G. Booch, J Rumbaugh, I Jacobson, "The Unified Modeling Language User Guide" 11th Ed., Pearson Education, 2003.

Reference Books:

- 1 I. Sommerville, "Software Engineering", Addison Wesley, 2004

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

Text Books:

1. Artificial Intelligence, E. Rich and K. Knight, TMH, 2nd ed., 1992.
2. Introduction to Expert Systems, Peter Jackson, AWP, M.A., 199.
3. Introduction to AI and Expert Systems, D.W. Patterson, PHI, 1992.

Reference Books:

1. Artificial Intelligence - an Engineering Approach, R.J. Schalkoff, McGraw Hill Int Ed., Singapore, 1992.
2. Principles of AI, N.J. Nilsson, , Narosa Publ. House, 1990.

REAL-TIME SYSTEMS

Text Books:

1. A.C. Shaw, Real-Time Systems and Software, Wiley.
2. J.E. Cooling, Real-Time Software Systems, International Thompson Computer Press.
3. W.A. Halang and K.M. Sacha, Real-Time Systems, World Scientific.

Reference Books:

1. Real-Time Systems Design and Analysis, P.H. Laplante, IEEE Press.
2. Real-Time Systems, J. Liu, Prentice-Hall, 2000.
3. Real-Time Computer Control, R. Bennett, Prentice-Hall.
4. Real-Time Systems, C.M. Krishna and K.G. Shin, McGraw-Hill.

DESIGN OF EMBEDDED SYSTEMS

Text Books:

1. Sriram V Iyer and Pankaj Gupta, "Embedded Real-time Systems Programming", TMH.
2. Mazidi and Mazidi, "The 8051 Microcontroller", PHI.
3. Embedded System by Raj Kamal, TMH.

Text Books:

1. The 8051 Microcontroller by Kenneth J. Ayala, Thomson DelMar Learning.
2. Microcontrollers by Deshmukh, TMH.
3. 8051 Microcontroller & Embedded systems by Rajiv Kapadia, Jaico.
4. Computer as components by wayne wolf, Harcourt India Pvt. Ltd.
5. Real time System and Analysis by Philip A. Laplante, Wiley.

DIGITAL SIGNAL PROCESSING

Text Books:

1. Alan V. Oppenheim & Ronald W. Schafer, "Digital Signal Processing" PHI.
2. Sanjit K. Mitra, "Digital Signal Processing: A computer based approach" TMH, Second Edition.
3. Chi-Tsong Chen, "Digital Signal Processing, Spectral Computation and Filter Design" Oxford University Press.

Text Books:

1. Monson H. Hayes, "Schaum's Outline of Digital Signal Processing", Mcgraw Hill.
2. Richard W. Hammming, "Digital Filters", Dover Pubns.
3. Lars Wanhammar, "DSP Integrated Circuits", Academic Press, First edition.
4. Simon S. Haykin, "Adaptive Filter Theory, " Prentice Hall, 3rd Edition.

ROBOTICS ENGINEERING

Text Books:

1. Introduction to robotics J. J. Craig, (Third ed 2003) Prentice Hall.
2. Robotic Engineering, Richard D. Klaffer, Prentice Hall.
3. Robotics, Fu K S, McGraw Hill.

Reference Books:

1. An Introduction to Robot Technology, / P. Coiffet and M. Chaironze / Kogam Page Ltd.
2. Industrial Robotics , Groover M P /Pearson Edu, 1983 .
3. Robotics and Control / Mittal R K & Nagrath I J / TMH.
4. Robot Dynamics & Control – Mark W. Spong and M. Vidyasagar / John Wiley

First Year M.Tech.(CSE) II Semester

BIOINFORMATICS

Text Books:

1. “Bioinformatics, Sequence and Genome Analysis”, David W. Mount; Cold Spring Harbor Laboratory Press
2. “Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins”, Andreas D. Baxevanis, Second Edition.
3. “Biological Sequence Analysis: Probabilistic Models of Proteins and Nucleic Acids”, Richard Durbin, Sean R. Eddy, Anders Krogh, Graeme Mitchison, Cambridge University Press.

Text Books:

1. “Fundamental Concepts of Bioinformatics”, D.E. Krane and M.L. Raymer, Person Education.
2. “Bioinformatics Computing”, B. Bergeron, Prentice –Hall.

WIRELESS & MOBILE COMMUNICATION

Text Books:

1. Mobile and Personal communication System and Services- Raj Pandya
2. Wireless Communication and Networks- William Stallings.
3. Wireless and Personal Communications Systems, Vijay Garg, Joseph Wilkes, Prentice-Hall, Englewood Cliffs, NJ, 1996.

Reference Books:

1. Fundamentals of Wireless Communication, David Tse and Pramod Viswanath, Cambridge University Press, 2005

FAULT TOLERANT AND TESTABLE SYSTEMS

Text Books:

1. Fault-Tolerant Computer System Design, D.K. Pradhan.
2. Design and Analysis of Fault-Tolerant Digital Systems, B.W.Johnson, Addison-Wesley
3. Fault-Tolerant Computing, Theory and Techniques, Volumes I and II, D.K. Pradhan, Prentice Hall.

Text Books:

1. Reliable Computer Systems: Design and Evaluation, D.P.Siewiorek and R.S.Swartz, Digital Press.
2. Probability and Statistics with Reliability, Queueing and Computer Science Application K.S.Trivedi, Prentice Hall.

ADVANCED COMPUTER GRAPHICS

Text Books:

1. Foley - Computer Graphics Principles & Practice, 2nd ed. Pearson Education.
2. Hearn & Baker - Computer Graphics C version, 2nd ed. Pearson Education.
3. Roger and Adams - Mathematical Element for Computer Graphics, 2nd ed., Tata McGraw Hill.

Text Books:

1. David F. Rogers, "Procedural Element for computer graphics", McGraw Hill Book Company.

RELIABLE SYSTEM DESIGN

Text Books:

1. Fault-Tolerant Computer System Design D.K. Pradhan, 2003.
2. Design and Analysis of Fault-Tolerant Digital Systems, B.W.Johnson, Addison-Wesley
3. Fault-Tolerant Computing, Theory and Techniques, Volumes I and II, D.K. Pradhan, Prentice Hall.

Reference Books:

1. Reliable Computer Systems: Design and Evaluation, D.P.Siewiorek and R.S.Swartz, Digital Press, 1992
2. Probability and Statistics with Reliability, Queueing and Computer Science Application K.S.Trivedi, Prentice Hall, 1982

First Year M.Tech.(CSE) II Semester

OPTIMIZATION TECHNIQUES

Text Books:

1. H.A.Taha – Operations Research, 8/e , Pearson Education.
2. J.K. Sharma – Operations Research, 3/e, Mcmillan , India Ltd, 2007.
3. S. Hiller & G.J. Lieberman – Operations Research, 8th Edn, TMH, New Delhi.

Text Books:

1. Kanti Swarup, Gupta Pk, Man Mohan, Operations Research, Sultan Chand & Sons

DISTRIBUTED ALGORITHMS

Text Books:

1. Nancy A. Lynch, "Distributed Algorithms", Morgan Kaufmann.
2. Nicola Santoro, "Design and Analysis of Distributed Algorithms", Wiley-Interscience
3. Gerard Tel, "Introduction to Distributed Algorithms 2nd ed", Cambridge University Press.

Text Books:

1. C. Xavier and S. S. Iyengar, "Introduction to Parallel Algorithms", Wiley-Interscience.

MODELING & SIMULATION

Text Books:

1. "System Modeling and Simulation - an Introduction", Frank L. Severance; John Wiley.
2. "Simulation Modeling and Analysis", Law Kelton, Third Edition, Mc-Graw Hill.

QUANTUM COMPUTING

Text Books:

1. Introduction to Quantum Computing, Philip Kaye et al., Oxford University Press.
2. Introduction to Quantum Computers, Gennady Berman, World Scientific.
3. Quantum Computation and Quantum Information, M. Nielsen and I. Chuang, Cambridge University Press, Cambridge.

Text Books:

1. Classical and Quantum Computation, A. Yu. Kitaev, A.H. Shen, and M.N. Vyalyi, American Mathematical Society, Providence.
2. Problems & Solutions in Quantum Computing & Information, W.H. Steeb and Y. Hardy, World Scientific, River Edge, NJ.

ENTERPRISE COMPUTING IN JAVA

Text Books:

1. Jim Farley, William Crawford, O'Reilly and Associates, "Java Enterprise in a Nutshell".
2. Brett McLaughlin, O'Reilly, "Java and XML, 2nd Edition.
3. Elliott Rusty Harold and W. Scott Means, O'Reilly, "XML in a Nutshell".

Text Books:

1. James Cooper, "Java Design Pattern: A Tutorial", Addison Wesley.
2. Govind Sesadri, "Enterprise java Computing: Application and Architectures", Cambridge University Publications.

First Year M.Tech.(CSE) II Semester

OPTICAL NETWORKS

Text Books:

1. Leonid Kazovsky, Sergio Benedetto and Alan Willner: 'Optical Fiber Communication Systems', Artech House.
2. John Senior: 'Optical Fiber Communications', PHI.
3. Silvello Betti, Giancarlo De Marchis and Eugenio Iannone: 'Coherent Optical Communications Systems', John Wiley.

Text Books:

1. G.P. Agrawal: 'Nonlinear Fiber Optics', Academic Press.

CLUSTER & GRID COMPUTING

Text Books:

1. William Gropp, Ewing Lusk, Thomas Sterling, Beowulf Cluster Computing with Linux, 2nd edition, MIT Press.
2. Bart Jacob, Michael Brown, Introduction to grid computing
3. Gregory F. Pfister, In Search of Clusters: The ongoing battle in lowly parallel computing, Second Edition, Prentice Hall Publishing Company, 1998.

SOFTWARE TESTING

Text Books:

1. Paul C. Jorgenson, Software Testing A Craftsman's approach, CRC Press, 1997.

2. Desikan, Ramesh, Software Testing: principles and Practices, Pearson Education.
3. William E. Perry, Effective Methods for Software Testing, John Wiley.

Reference Books:

1. Steven R. Rakitin, Software Verification and Validation for Practitioners and Managers, 2nd edition, Artech House.
2. Boris Beizer, "Software Testing Techniques", Second Volume, Second Edition, Van Nostrand Reinhold, New York, 1990.
3. Louise Tamres, "Software Testing", Pearson Education Asia, 2002.
4. Boris Beizer, "Software System Testing and Quality Assurance", Van Nostrand Reinhold, New York, 1984.

COMPUTER VISION

Text Books:

1. Computer Vision by Linda Shapiro and George Stockman, Prentice-Hall 2001.
2. Computer Vision, D Ballard and C Brown, Prentice-Hall 1982.
3. 2D Object Detection and Recognition: Models, Algorithms, and Networks, Yali Amit, MIT Press, 2002.

NANO TECHNOLOGY

Text Books

1. Additional handouts will be provided from the following books:
David Ferry, Transport in Nanostructures, Cambridge University Press, 2000.
2. Y. Imry, Introduction to Mesoscopic Physics, Oxford University Press, 1997.

Reference Books

1. S. Datta, Electron Transport in Mesoscopic Systems, Cambridge University
2. H. Grabert and M. Devoret, Single Charge Tunneling, Plenum Press, 1992.
3. Beenaker and Van Houten, Quantum Transport in Semiconductor Nanostructures, in Solid State Physics v. 44, eds. Ehrenreich and Turnbull, Academic Press, 1991.
4. P. Rai-Choudhury, Handbook of Microlithography, Micromachining & Microfabrication, SPIE, 1997.

First Year M.Tech.(CSE) III Semester

DATA WAREHOUSING AND DATA MINING

Text Books:

1. Data Warehousing Fundamentals, P.Ponnian, John Wiley.
2. Data Mining Introductory & Advanced Topics, M.H.Dunham, Pearson Education.
3. Data Mining Concepts & Techniques, Han, Kamber, M.Kaufman.

PATTERN RECOGNITION

Text Books:

1. R.O.Duda, P.E.Hart and D.G.Stork, "Pattern Classification", John Wiley.
2. Julius T. Tou and Rafael C. Gonzalez, Addison, "Pattern Recognition principles", Wesley.
3. Christopher M. Bishop, "Pattern recognition and machine learning", Springer.

Reference Books:

4. Luc Devroye, László Györfi, Gábor Lugosi, "A probabilistic theory of pattern recognition", Springer.

NATURAL LANGUAGE PROCESSING**Text Books:**

1. "Computational Linguistics, and Speech Recognition", Daniel Jurafsky and James H. Martin, PHI.
2. C. Manning and H. Schütze, "Foundations of Statistical Natural Language Processing"
3. Akshar Bharti, Vineet Chaitanya and Rajeev Sangal, "NLP: A Paninian Perspective", Prentice Hall.

Reference Books:

1. James Allen, "Natural Language Understanding", Pearson Education.

SOFT COMPUTING**Text Books:**

1. "An Introduction to Neural Networks", Anderson J.A., PHI.
2. "Introduction to the Theory of Neural Computation", Hertz J. Krogh, R.G. Palmer, Addison-Wesley, California.
3. "Fuzzy Sets & Fuzzy Logic", G.J. Klir & B. Yuan, PHI.

Reference Books:

1. "An Introduction to Genetic Algorithm", Melanie Mitchell, PHI.

SEMANTIC WEB**Text Books:**

1. "A Semantic Web Primer", Grigoris Antoniou and Frank van Harmelen, MIT Press.
2. "Spinning the Semantic Web - Bringing the World Wide Web to Its Full Potential", MIT Press, Dieter Fensel, James A. Hendler, Henry Lieberman, and Wolfgang Wahlster (Eds.)
3. "The Semantic Web: A guide to the future of XML, Web Services and Knowledge Management", Michael C. Daconta, Leo J. Obrst Kevin T. Smith, Wiley Publishing.

Reference Books:

1. "Principles of Semantic Networks: Explorations in the representation of knowledge", John Sowa. Morgan Kaufmann.
2. Russell and Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall.
3. Han Reichgelt, "Knowledge Representation: An AI Perspective", Ablex Publishing.

DIGITAL IMAGE PROCESSING**Text Books:**

1. "Digital Image Processing", Rafael C. Gonzalez & Richard E. Woods, AWL.
2. "Fundamental of Digital Image Processing", A.K. Jain, PHI.
3. "Computer Imaging: Digital Image Analysis and Processing", SE Umbaugh, CRC Press, 2005.

Text Books:

1. "Digital Image Processing Algorithms", Pitas, I., Prentice Hall, 1993.

First Year M.Tech.(CSE) III Semester

GEO-INFORMATICS

REFERENCE BOOKS

1. Kali Charan Sahu, "Remote Sensing and Geographical Information Systems", Atlantic Publishers and distributors.
2. Joseph L. Awange, Erik W. Grafarend, Ba(c)La Palancz, Béla Paláncz, Piroska Zaletnyik," Algebraic Geodesy and Geoinformatics", Springer.
3. A. Krishna Sinha , "Geoinformatics: data to knowledge", Geological Society of America.

ADVANCES IN INTERNET AND WEB TECHNOLOGY

Text Books:

1. Internet and Web Technologies by Raj Kamal, Tata McGraw Hill edition.
2. An Introduction to Search Engines and Web Navigation, Mark Levene, Pearson Education.
3. Mining the Web: Discovering Knowledge from Hypertext Data, Soumen Chakrabarti, Morgan-Kaufmann Publishers.
4. Modeling the Internet and the Web, Pierre Baldi, Paolo Frasconi, Padhraic Smyth, John Wiley and Sons Ltd.

ADVANCES IN MULTIMEDIA TECHNOLOGY

Text Books:

1. Internet and Web Technologies by Raj Kamal, Tata McGraw Hill edition.
2. An Introduction to Search Engines and Web Navigation, Mark Levene, Pearson Education.
3. Mining the Web: Discovering Knowledge from Hypertext Data, Soumen Chakrabarti, Morgan-Kaufmann Publishers.
4. Modeling the Internet and the Web, Pierre Baldi, Paolo Frasconi, Padhraic Smyth, John Wiley and Sons Ltd.

VLSI DESIGN

Text Book:

2. "Digital Integrated Circuit", J.M. Rabaey, Chandrasan, Nicolic, Pearson
3. "CMOS Digital Integrated Circuit", S.M. Kang & Y. Leblebici, TMH
4. "Modern VLSI Design", Wayne Wolf, Pearson

Reference Books:

1. "Algorithm for VLSI Design & Automation", N. Sherwani, Kluwer
2. "VHDL", Bhaskar, PHI
3. "Digital Integrated Circuits" Demassa & Ciccone, Willey Pub.
4. "Modern VLSI Design: system on silicon" Wayne Wolf; Addison Wesley Longman
5. "Basic VLSI Design" Douglas A. Pucknell & Kamran Eshranghian; PHI
6. "CMOS Circuit Design, Layout & Simulation", R.J. Baker, H.W. Lee, D.E. Boyee, PHI.

VLSI DESIGN AND CAD OF VLSI

Text Books:

1. Verilog HDL, Samir Palnitkar, Second Edition, Pearson Education, 2004.
2. Verilog HDL Synthesis, J.Bhaskar, BS publications, 2001.

SOFTWARE PROJECT MANAGEMENT

Text Books:

1. Watts S. Humphrey, "Managing the Software Process", Pearson Education
2. Walker Royce, "Software Project Management", Pearson Education.
3. Pankaj Jalote, "Software Project Management in Practice", Pearson Education.

Reference Books:

1. Bob Hughes, "Software Project Management", TMH.
2. Chris Kemerer, "Software Project Management Readings and Cases".