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HYDERABAD

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(58007) MANAGEMENT SCIENCE

Unit I

www.jntuworld.com

Introduction to Management: Entrepreneurship and organization - Nature and Importance of Management, Functions of Management, Taylor's Scientific Management Theory, Fayol's Principles of Management, Maslow's Theory of Human Needs, Douglas McGregor's Theory X and Theory Y, Herzberg's Two-Factor Theory of Motivation, Systems Approach to Management, Leadership Styles, Social responsibilities of Management.

Unit II

Designing Organisational Structures: Departmentation and Decentralisation, Types of Organisation structures - Line organization, Line and staff organization, functional organization, Committee organization, matrix organization, Virtual Organisation, Cellular Organisation, team structure, boundaryless organization, inverted pyramid structure, lean and flat organization structure and their merits, demerits and suitability.

Unit III

Operations Management: Principles and Types of Plant Layout-Methods of production (Job, batch and Mass Production), Work Study -Basic procedure involved in Method Study and Work Measurement-Statistical Quality Control: $\overline{X}$ chart, R chart, c chart, p chart, (simple Problems), Acceptance Sampling, Deming's contribution to quality.

Unit IV

A) Materials Management: Objectives, Need for Inventory control, EOQ, ABC Analysis, Purchase Procedure, Stores Management and Stores Records - Supply Chain Management

B) Marketing: Functions of Marketing, Marketing Mix, Marketing Strategies based on Product Life Cycle., Channels of distribution.

Unit V

Human Resources Management (HRM): Evolution of HRM, Concepts of HRM, Basic functions of HR Manager: Manpower planning, Recruitment, Selection, Training and Development, Placement, Wage and Salary Administration, Promotion, Transfer, Separation, Performance Appraisal, Grievance Handling and Welfare Administration, Job Evaluation and Merit Rating.

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Unit VI

Project Management (PERT/CPM): Network Analysis, Programme Evaluation and Review Technique (PERT), Critical Path Method (CPM), Identifying critical path, Probability of Completing the project within given time, Project Cost Analysis, Project Crashing. (simple problems)

Unit VII

Strategic Management: Mission, Goals, Objectives, Policy, Strategy, Programmes, Elements of Corporate Planning Process, Environmental Scanning, SWOT Analysis, Steps in Strategy Formulation and Implementation, Generic Strategy alternatives.

Unit VIII

Contemporary Management Practices: Basic concepts of Just-In-Time (JIT) System, Total Quality Management (TQM), Six sigma and Capability Maturity Model (CMM) Levels, Value Chain Analysis, Enterprise Resource Planning (ERP), Performance Management, Business Process outsourcing (BPO), Business Process Re-engineering 5S Model, Deming's PDCA, Kaizen, Poka-Yoke, Muda, Benchmarking, Balanced Score Card.

TEXT BOOK:

1. Aryasri: Management Science, TMH, New Delhi, 2009

REFERENCE BOOKS:

1. Stoner, Management, Pearson, 2009
2. Kotler Philip & Keller Kevin Lane: Marketing Management PHI, 2009.
3. Koontz, Weihrich, & Aryasri: Principles of Management, TMH, 2009.

4. Thomas N.Duening & John M.Ivancevich Management—Principles and Guidelines, Cengage, 2009.
5. Kanishka Bedi, Production and Operations Management, Oxford University Press, 2009.
6. Memoria & S.V.Ganker, Personnel Management, Himalaya, 2009
7. Schermerhorn: Management, Wiley, 2009.
8. Parnell: Strategic Management, Biztantra, 2009.
9. L.S.Srinath: PERT/CPM, Affiliated East-West Press, 2009.
10. William J. Stevenson & Ceyhun Ozgur: Introduction to Management Science, TMH, 2007. *www.jntuworld.com*

Pre-requisites: Managerial Economics

Objective: To familiarize with the process of management and to provide basic insights into select contemporary management practices.

Codes/Tables: Normal Distribution Function Table need to be permitted into the examination Hall.

Question Paper Pattern: 5 Questions to be answered out of 8 questions. The question paper should contain atleast 2 practical problems, one each from units –III & VI

Each question should not have more than 3 bits.

Unit VIII will have only short questions, not essay questions.

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(58035) WEB SERVICES
(ELECTIVE – III)

UNIT-I

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Evolution and Emergence of Web Services - Evolution of distributed computing, Core distributed computing technologies – client/server, CORBA, JAVA RMI, Micro Soft DCOM, MOM, Challenges in Distributed Computing, role of J2EE and XML in distributed computing, emergence of Web Services and Service Oriented Architecture (SOA).

UNIT-II

Introduction to Web Services – The definition of web services, basic operational model of web services, tools and technologies enabling web services, benefits and challenges of using web services.

UNIT-III

Web Services Architecture – Web services Architecture and its characteristics, core building blocks of web services, standards and technologies available for implementing web services, web services communication, basic steps of implementing web services, developing web services enabled applications.

UNIT-IV

Core fundamentals of SOAP – SOAP Message Structure, SOAP encoding , SOAP message exchange models, SOAP communication and messaging, SOAP security.

UNIT-V

Developing Web Services using SOAP – Building SOAP Web Services, developing SOAP Web Services using Java, limitations of SOAP.

UNIT-VI

Describing Web Services – WSDL – WSDL in the world of Web Services, Web Services life cycle, anatomy of WSDL definition document, WSDL bindings, WSDL Tools, limitations of WSDL.

UNIT - VII

Discovering Web Services – Service discovery, role of service discovery in a SOA, service discovery mechanisms, UDDI – UDDI Registries, uses of UDDI Registry, Programming with UDDI, UDDI data structures, support for categorization in UDDI Registries, Publishing API, Publishing information to a UDDI Registry, searching information in a UDDI Registry, deleting information in a UDDI Registry, limitations of UDDI.

UNIT - VIII

www.jntuworld.com

Web Services Interoperability – Means of ensuring Interoperability, Overview of .NET and J2EE. Web Services Security – XML security frame work, XML encryption, XML digital signature, XKMS structure, guidelines for signing XML documents.

TEXT BOOKS:

1. Developing Java Web Services, R. Nagappan, R. Skoczylas, R.P. Sriganesh, Wiley India, rp – 2008.

2. Developing Enterprise Web Services, S. Chatterjee, J. Webber, Pearson Education, 2008.

3. XML, Web Services, and the Data Revolution, F.P.Coyle, Pearson Education.

REFERENCES:

1. Building Web Services with Java, 2nd Edition, S. Graham and others, Pearson Edn., 2008.

2. Java Web Services, D.A. Chappell & T. Jewell, O'Reilly.SPD.

3. McGovern, et al., "Java Web Services Architecture", Morgan Kaufmann Publishers,2005.

4. J2EE Web Services, Richard Monson-Haefel, Pearson Education.

5. Web Services, G. Alonso, F. Casati and others, Springer, 2005.

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(58036) SEMANTIC WEB AND SOCIAL NETWORKS
(ELECTIVE – III)

Unit I:

Thinking and Intelligent Web Applications, The Information Age ,The World Wide Web, Limitations of Todays Web,The Next Generation Web

Unit II:

Machine Intelligence, Artifical Intelligence, Ontology, Inference engines,Software Agents, Berners-Lee www, Semantic Road Map, Logic on the semantic Web. *www.jntuworld.com*

Unit III:

Ontologies and their role in the semantic web, Ontologies Languages for the Semantic Web –Resource Description Framework(RDF) / RDF Schema, Ontology Web Language(OWL),UML,XML/XML Schema.

Unit IV:

Ontology Engineering,Constructing Ontology,Ontology Development Tools,Ontology Methods,Ontology Sharing and Merging,Ontology Libraries and Ontology Mapping.

Unit V

Logic,Rule and Inference Engines. Semantic Web applications and services, Semantic Search,e-learning,Semantic Bioinformatics,Knowledge Base

Unit VI:

XML Based Web Services,Creating an OWL-S Ontology for Web Services,Semantic Search Technology,Web Search Agents and Semantic Methods,

Unit VII:.

What is social Networks analysis,development of the social networks

analysis, Electronic Sources for Network Analysis – Electronic Discussion networks,

Unit VIII

Blogs and Online Communities,Web Based Networks.Building Semantic Web Applications with social network features.

TEXT BOOKS: *www.jntuworld.com*

1. Thinking on the Web - Berners Lee,Godel and Turing,Wiley interscience,2008.
2. Social Networks and the Semantic Web ,Peter Mika,Springer,2007.

REFERENCE BOOKS:

1. Semantic Web Technologies ,Trends and Research in Ontology Based Systems, J.Davies, Rudi Studer, Paul Warren, John Wiley & Sons.
2. Semantic Web and Semantic Web Services -Liyang Lu Chapman and Hall/CRC Publishers,(Taylor & Francis Group)
3. Information Sharing on the semantic Web - Heiner Stuckenschmidt; Frank Van Harmelen, Springer Publications.
4. Programming the Semantic Web,T.Segaran, C.Evans, J.Taylor, O'Reilly.SPD.

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(58037) SCRIPTING LANGUAGES (ELECTIVE – III)

UNIT – I : Introduction to PERL and Scripting

Scripts and Programs, Origin of Scripting , Scripting Today, Characteristics of Scripting Languages,Uses for Scripting Languages, Web Scripting, and the universe of Scripting Languages. PERL- Names and Values, Variables, Scalar Expressions, Control Structures, arrays, list, hashes, strings, pattern and regular expressions, subroutines.

UNIT – II : Advanced perl

Finer points of looping, pack and unpack, filesystem, eval, datastructures, packages, modules, objects, interfacing to the operating system, Creating Internet ware applications, Dirty Hands Internet Programming, security Issues.

UNIT – III : PHP Basics

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PHP Basics- Features,Embedding PHP Code in your Web pages,Outputting the data to the browser, Datatypes, Variables, Constants,expressions,string interpolation, control structures . Function,Creating a Function,Function Libraries,Arrays,strings and Regular Expressions.

UNIT.– IV : Advanced PHP Programming

PHP and Web Forms, Files, PHP Authentication and Methodolgies -Hard Coded, File Based, Database Based, IP Based, Login Administration, Uploading Files with PHP, Sending Email using PHP, PHP Encryption Functions, the Mcrypt package, Building Web sites for the World.

UNIT - V : TCL

TCL Structure, syntax, Variables and Data in TCL, Control Flow, Data Structures, input/output, procedures , strings , patterns, files, Advance TCL- eval, source, exec and uplevel commands, Name spaces, trapping errors, event driven programs, making applications internet aware, Nuts and Bolts Internet Programming, Security Issues, C Interface.

UNIT VI : Tk

Tk-Visual Tool Kits, Fundamental Concepts of Tk, Tk by example, Events and Binding , Perl-Tk.

UNIT – VII : Python

Introduction to Python langauge, python-syntax,statements,functions,Built-in-functions and Methods, Modules in python,Exception Handling.

UNIT - VIII

Integrated Web Applications in Python – Building Small, Efficient Python Web Systems ,Web Application Framework.

TEXT BOOKS:

1. The World of Scripting Languages , David Barron,Wiley Publications.
2. Python Web Programming , Steve Holden and David Beazley ,New Riders Publications.
3. Beginning PHP and MySQL , 3ª Edition , Jason Gilmore,Apress Publications (Dream tech.).

REFERENCE BOOKS: *www.jntuworld.com*

1. Open Source Web Development with LAMP using Linux, Apache,MySQL,Perl and PHP,J.Lee and B.Ware(Addison Wesley) Pearson Education.
2. Programming Python,M.Lutz,SPD.
3. PHP 6 Fast and Easy Web Development Julie Meloni and Matt Telles, Cengage Learning Publications.
4. PHP 5.1,I.Bayross and S.Shah,The X Team,SPD.
5. Core Python Programming,Chun,Pearson Education.
6. Guide to Programming with Python,M.Dawson,Cengage Learning.
7. Perl by Example,E.Quigley,Pearson Education.
8. Programming Perl,Larry Wall,T.Christiansen and J.Orwant, O'Reilly, SPD.
9. Tcl and the Tk Tool kit,Ousterhout,Pearson Education.
10. PHP and MySQL by Example,E.Quigley,Prentice Hall(Pearson).
11. Perl Power,J.P.Flynt,Cengage Learning.
12. PHP Programming solutions,V.Vaswani,TMH.

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(58038) MULTIMEDIA & RICH INTERNET APPLICATIONS (ELECTIVE – III)

UNIT - I

Fundamental concepts in Text and Image: Multimedia and hypermedia, World Wide Web, overview of multimedia software tools. Graphics and image data representation graphics/image data types, file formats, Color in image and video: color science, color models in images, color models in video.

UNIT-II

Fundamental concepts in video and digital audio: Types of video signals, analog video, digital video. digitization of sound, MIDI, quantization and transmission of audio.

www.jntuworld.com

UNIT III

Multimedia Data Compression: Lossless compression algorithms, Lossy compression algorithms, Image compression standards.

UNIT IV

Basic Video compression techniques, Case study: MPEG Video Coding I, Basic Audio compression techniques, Case study: MPEG Audio compression.

UNIT - V

Web 2.0

What is web 2.0, Search,Content Networks,User Generated Content, Blogging, Social Networking, Social Media, Tagging, Social Marking, Rich Internet Applications, Web Services, Mashups, Location Based Services, XML, RSS, Atom, JSON, and VoIP, Web 2.0 Monetization and Business Models, Future of the Web.

UNIT - VI

Rich Internet Applications(RIAs) with Adobe Flash : Adobe Flash-Introduction, Flash Movie Development, Learning Flash with Hands-on Examples, Publish your flash movie. Creating special effects with Flash, Creating a website splash screen, action script, web sources.

UNIT - VII

Rich Internet Applications(RIAs) with Flex 3 - Introduction, Developing with Flex 3, Working with Components, Advanced Component Development,

Visual Effects and Multimedia.

UNIT-VIII

Ajax- Enabled Rich Internet Application : Introduction, Traditional Web Applications vs Ajax Applications, Rich Internet Application with Ajax, History of Ajax, Raw Ajax example using xmlhttprequest object, Using XML, Creating a full scale Ajax Enabled application, Dojo ToolKit.

TEXT BOOKS:

1. Fundamentals of Multimedia by Ze-Nian Li and Mark S. Drew PHI Learning, 2004
2. Professional Adobe Flex 3, Joseph Balderson, Peter Ent, et al, Wrox Publications, Wiley India, 2009.
3. AJAX, Rich Internet Applications, and Web Development for Programmers, Paul J Deitel and Harvey M Deitel,Deitel Developer Series, Pearson Education

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REFERENCES:

1. Multimedia Communications: Applications, Networks, Protocols and Standards, Fred Halsall, Pearson Education, 2001, rp 2005.
2. Multimedia Making it work, Tay Vaughan, 7th edition, TMH, 2008.
3. Introduction to multimedia communications and Applications, Middleware, Networks, K.R.Rao, Zoran, Dragored, Wiley India, 2006, rp. 2009.
4. Multimedia Computing, Communications & Applications, Ralf Steinmetz and Klara Nahrstedt,Pearson Education, 2004
5. Principles of Multimedia, Ranjan Parekh, TMH, 2006.
6. Multimedia in Action, James E.Shuman, Cengage Learning, 198, rp 2008.
7. Multimedia Systems design, Prabhat K. Andleigh, Kiran Thakrar, PHI, 1986.
8. Multimedia and Communications Technology, Steve Heath. Elsevier, 1999, rp 2003.
9. Adobe Flash CS3 Professional, Adobe press, Pearson Education, 2007.
10. Flash CS3 Professional Advanced, Russel Chun, Pearson Education, 2007.
11. Flash CS5, Chris Grover, O'Reilly, SPD, 2010.
12. SAMS Teach yourself Adobe flash CS3, Pearson Education, 2007.
13. Flex 4 Cookbook, Joshua Noble, et.al, O'Reilly,SPD 2010.
14. Flex3 – A beginner's guide, Michele E.Davis, Jon A.Phillips, TMH, 2008.
15. Mastering Dojo,R.Gill,C.Riecke and A.Russell,SPD.

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(58039) ADHOC AND SENSOR NETWORKS
(ELECTIVE-IV)

UNIT I

Introduction to Ad Hoc Wireless Networks
Characteristics of MANETs, Applications of MANETs, Challenges.

UNIT II
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Routing in MANETs

Topology-based versus Position-based approaches, Topology based routing protocols, Position based routing, Other Routing Protocols.

UNIT III

Data Transmission in MANETs
The Broadcast Storm, Multicasting, Geocasting
TCP over Ad Hoc Networks
TCP Protocol overview, TCP and MANETs, Solutions for TCP over Ad Hoc

UNIT IV

Basics of Wireless Sensors and Applications
The Mica Mote, Sensing and Communication Range, Design Issues, Energy consumption, Clustering of Sensors, Applications

UNIT V

Data Retrieval in Sensor Networks
Classification of WSNs, MAC layer, Routing layer, High-level application layer support, Adapting to the inherent dynamic nature of WSNs.

UNIT VI

Security
Security in Ad hoc Wireless Networks, Key Management, Secure Routing, Cooperation in MANETs, Intrusion Detection Systems.

UNIT VII

Sensor Network Platforms and Tools

Sensor Network Hardware, Sensor Network Programming Challenges, Node-Level Software Platforms   *www.jntuworld.com*

UNIT VIII

Operating System – TinyOS
Imperative Language: nesC, Dataflow style language: TinyGALS, Node-Level Simulators, ns-2 and its sensor network extension, TOSSIM

TEXT BOOKS:

1.   Ad Hoc and Sensor Networks – Theory and Applications, Carlos Corderio Dharma P.Aggarwal, World Scientific Publications / Cambridge University Press, March 2006
2.   Wireless Sensor Networks: An Information Processing Approach, Feng Zhao, Leonidas Guibas, Elsevier Science imprint, Morgan Kauffman Publishers, 2005, rp2009

REFERENCE BOOKS:

1.   Adhoc Wireless Networks – Architectures and Protocols, C.Siva Ram Murthy, B.S.Murthy, Pearson Education, 2004
2.   Wireless Sensor Networks – Principles and Practice, Fei Hu, Xiaojun Cao, An Auerbach book, CRC Press, Taylor & Francis Group, 2010
3.   Wireless Ad hoc Mobile Wireless Networks – Principles, Protocols and Applications, Subir Kumar Sarkar, et al., Auerbach Publications, Taylor & Francis Group, 2008.
4.   Ad hoc Networking, Charles E.Perkins, Pearson Education, 2001.
5.   Wireless Ad hoc Networking, Shih-Lin Wu, Yu-Chee Tseng, Auerbach Publications, Taylor & Francis Group, 2007
6.   Wireless Ad hoc and Sensor Networks – Protocols, Performance and Control, Jagannathan Sarangapani, CRC Press, Taylor & Francis Group, 2007, rp 2010.
7.   Security in Ad hoc and Sensor Networks, Raheem Beyah, et al., World Scientific Publications / Cambridge University Press, , 2010
8.   Ad hoc Wireless Networks – A communication-theoretic perspective, Ozan K.Tonguz, Gialuigi Ferrari, Wiley India,2006, rp2009.
9.   Wireless Sensor Networks – Signal processing and communications perspectives, Ananthram Swami, et al., Wiley India, 2007, rp2009.

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(58040) STORAGE AREA NETWORKS (ELECTIVE–IV)

Unit I:

Review data creation and the amount of data being created and understand the value of data to a business, challenges in data storage and data management, Solutions available for data storage, Core elements of a data center infrastructure, role of each element in supporting business activities

Unit II: *www.jntuworld.com*

Hardware and software components of the host environment, Key protocols and concepts used by each component ,Physical and logical components of a connectivity environment ,Major physical components of a disk drive and their function, logical constructs of a physical disk, access characteristics, and performance Implications.

Unit III:

Concept of RAID and its components , Different RAID levels and their suitability for different application environments: RAID 0, RAID 1, RAID 3, RAID 4, RAID 5, RAID 0+1, RAID 1+0, RAID 6, Compare and contrast integrated and modular storage systems ,High-level architecture and working of an intelligent storage system

Unit IV:

Evolution of networked storage, Architecture, components, and topologies of FC-SAN, NAS, and IP-SAN , Benefits of the different networked storage options, Understand the need for long-term archiving solutions and describe how CAS fulfills the need , Understand the appropriateness of the different networked storage options for different application environments

Unit V:

List reasons for planned/unplanned outages and the impact of downtime.

Impact of downtime, Differentiate between business continuity (BC) and disaster recovery (DR) ,RTO and RPO, Identify single points of failure in a storage infrastructure and list solutions to mitigate these failures.

Unit VI:

Architecture of backup/recovery and the different backup/recovery topologies , replication technologies and their role in ensuring information availability and business continuity, Remote replication technologies and their role in providing disaster recovery and business continuity capabilities

Unit VII

Identify key areas to monitor in a data center, Industry standards for data center monitoring and management, Key metrics to monitor for different components in a storage infrastructure, Key management tasks in a data center, Information security, Critical security attributes for information systems, Storage security domains, List and analyzes the common threats in each domain

Unit VIII:

Virtualization technologies, block-level and file-level virtualization technologies and processes.

Case Studies *www.jntuworld.com*

The technologies described in the course are reinforced with EMC examples of actual solutions.

Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

TEXT BOOKS:

1. EMC Corporation, Information Storage and Management, Wiley.

REFERENCE BOOKS:

1. Robert Spalding, "Storage Networks: The Complete Reference", Tata McGraw Hill , Osborne, 2003.

2. Marc Farley, "Building Storage Networks", Tata McGraw Hill ,Osborne, 2001.

3. Meeta Gupta, Storage Area Network Fundamentals, Pearson Education Limited, 2002.

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(58041) DATA BASE SECURITY
(ELECTIVE – IV)

UNIT I

Introduction

Introduction to Databases Security Problems in Databases Security Controls Conclusions

UNIT II

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Security Models -1

Introduction Access Matrix Model Take-Grant Model Acten Model PN Model Hartson and Hsiao's Model Fernandez's Model Bussolati and Martella's Model for Distributed databases

UNIT III

Security Models -2

Bell and LaPadula's Model Biba's Model Dion's Model Sea View Model Jajodia and Sandhu's Model The Lattice Model for the Flow Control conclusion

UNIT IV

Security Mechanisms

Introduction User Identification/Authentication Memory Protection Resource Protection Control Flow Mechanisms Isolation Security Functionalities in Some Operating Systems Trusted Computer System Evaluation Criteria

UNIT V

Security Software Design

Introduction A Methodological Approach to Security Software Design Secure Operating System Design Secure DBMS Design Security Packages

Database Security Design

UNIT VI

Statistical Database Protection & Intrusion Detection Systems Introduction Statistics Concepts and Definitions Types of Attacks Inference Controls evaluation Criteria for Control Comparison .Introduction IDES System RETISS System ASES System Discovery

UNIT VII

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Models For The Protection Of New Generation Database Systems -1 Introduction A Model for the Protection of Frame Based Systems A Model for the Protection of Object-Oriented Systems SORION Model for the Protection of Object-Oriented Databases

UNIT VIII

Models For The Protection Of New Generation Database Systems -2 A Model for the Protection of New Generation Database Systems: the Orion Model Jajodia and Kogan's Model A Model for the Protection of Active Databases Conclusions

TEXT BOOKS:

1. Database Security by Castano Pearson Edition (1/e)
2. Database Security and Auditing: Protecting Data Integrity and Accessibility, 1st Edition, Hassan Afyouni, THOMSON Edition

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(58042) EMBEDDED SYSTEMS
(ELECTIVE –IV)

Unit - I

Embedded Computing : Introduction, Complex Systems and Microprocessor, The Embedded System Design Process, Formalisms for System Design, Design Examples. (Chapter I from Text Book 1, Wolf).

Unit - II

www.jntuworld.com

The 8051 Architecture : Introduction, 8051 Micro controller Hardware, Input/Output Ports and Circuits, External Memory, Counter and Timers, Serial data Input/Output, Interrupts. (Chapter 3 from Text Book 2, Ayala).

Unit - III

Basic Assembly Language Programming Concepts : The Assembly Language Programming Process, Programming Tools and Techniques, Programming the 8051, Data Transfer and Logical Instructions.

(Chapters 4,5 and 6 from Text Book 2, Ayala).

Unit - IV

Arithmetic Operations, Decimal Arithmetic. Jump and Call Instructions, Further Details on Interrupts.

(Chapter 7and 8 from Text Book 2, Ayala)

Unit - V

Applications : Interfacing with Keyboards, Displays, D/A and A/D Conversions, Multiple Interrupts, Serial Data Communication. (Chapter 10 and 11 from Text Book 2, Ayala).

Unit - VI

Introduction to Real – Time Operating Systems : Tasks and Task States, Tasks and Data, Semaphores, and Shared Data; Message Queues, Mailboxes

and Pipes, Timer Functions, Events, Memory Management, Interrupt Routines in an RTOS Environment.

(Chapter 6 and 7 from Text Book 3, Simon).

Unit - VII

Basic Design Using a Real-Time Operating System : Principles, Semaphores and Queues, HardReal-Time Scheduling Considerations, Saving Memory and Power, An example RTOS like uC-OS (Open Source); Embedded Software Development Tools: Host and Target machines, Linker/Locators for Embedded

Software, Getting Embedded Software into the Target System; Debugging Techniques: Testing on Host Machine, Using Laboratory Tools, An Example System. (Chapter 8,9,10,& 11 from Text Book 3, Simon).

Unit - VIII

Introduction to advanced architectures : ARM and SHARC, Processor and memory organization and Instruction level parallelism; Networked embedded systems: Bus protocols, I2C bus and CAN bus; Internet-Enabled Systems, Design Example-Elevator Controller.

(Chapter 8 from Text Book 1, Wolf).

TEXT BOOKS :   *www.jntuworld.com*

1. Computers and Components, Wayne Wolf, Elseveir.
2. The 8051 Microcontroller , Kenneth J.Ayala, Thomson.

REFERENCES :

1. Embedding system building blocks, Labrosse, via CMP publishers.
2. Embedded Systems, Raj Kamal, TMH.
3. Micro Controllers, Ajay V Deshmukhi, TMH.
4. Embedded System Design, Frank Vahid, Tony Givargis, John Wiley.
5. Microcontrollers, Raj kamal, Pearson Education.
6. An Embedded Software Primer, David E. Simon, Pearson Education.

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(58617) INDUSTRY ORIENTED MINI PROJECT

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(58618) SEMINAR

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(58619) PROJECT WORK

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(58620) COMPREHENSIVE VIVA