



VEL TECH MULTI TECH Dr RANGARAJAN Dr.SAKUNTHALA ENGINEERING COLLEGE

(An ISO 9001: 2008 Certified Institution)

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Accredited by NBA, New Delhi)



SYLLABUS

WEEKLY SCHEDULE

**M.E CSE (NETWORKING)
III SEMESTER 2015 - 2016**

**DEPARTMENT OF CSE
II YEARS DEGREE COURSE**

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WEEK DETAILS

SL.NO.	WEEK	FROM	TO
1	WEEK1	24.06.2015	26.06.2015
2	WEEK2	29.06.2015	03.07.2015
3	WEEK3	06.07.2015	10.07.2015
4	WEEK4	13.07.2015	17.07.2015
5	WEEK5	20.07.2015	24.07.2015
6	WEEK6	27.07.2015	28.07.2015
7	WEEK7	03.08.2015	07.08.2015
8	WEEK8	10.08.2015	14.08.2015
9	WEEK9	17.08.2015	21.08.2015
10	WEEK10	24.08.2015	28.08.2015
11	WEEK11	31.08.2015	04.09.2015
12	WEEK12	07.09.2015	11.09.2015
13	WEEK13	14.09.2015	18.09.2015
14	WEEK14	21.09.2015	25.09.2015
15	WEEK15	28.09.2015	30.09.2015
16	WEEK16	05.10.2015	09.10.2015
17	WEEK17	12.10.2015	16.10.2015
18	WEEK18	19.10.2015	20.10.2015
19	WEEK19	27.10.2015	30.10.2015

SUBJECT CONTENTS

SL.NO	SUBJECT CODE	SUBJECT NAME
THEORY		
1	NE7301	WIRELESS NETWORKS
2	CP7022	SOFTWARE DESIGN
3	NE7010	NEXT GENERATION NETWORKS
4	CP7029	INFORMATION STORAGE MANAGEMENT
PRACTICAL		
5	NE7311	Project Work (Phase I - Network Based)

TEST / EXAM SCHEDULE

SL.NO	SUBJECT CODE	SUBJECT NAME	UNIT TEST I	UNIT TEST II	Pre Model Exam	UNIT TEST IV
1	NE7301	WIRELESS NETWORKS	13.07.2015	03.08.2015	21.08.2015	14.09.2015
2	CP7022	SOFTWARE DESIGN	14.07.2015	04.08.2015	22.08.2015	15.09.2015
3	NE7010	NEXT GENERATION NETWORKS	15.07.2015	05.08.2015	24.08.2015	16.09.2015
4	CP7029	INFORMATION STORAGE MANAGEMENT	16.07.2015	06.08.2015	25.08.2015	18.09.2015

SL.NO	SUBJECT CODE	SUBJECT NAME	MODEL EXAM
1	NE7301	WIRELESS NETWORKS	05.10.2015
2	CP7022	SOFTWARE DESIGN	06.10.2015
3	NE7010	NEXT GENERATION NETWORKS	07.10.2015
4	CP7029	INFORMATION STORAGE MANAGEMENT	08.10.2015

NE7301 WIRELESS NETWORKS

UNIT I WIRELESS LANS, PANS AND MANS

WEEK 1: Introduction, fundamentals of WLAN – technical issues, network architecture, IEEE 802.11- physical layer

WEEK 2: Mac layer mechanism, CSMA/CA, Bluetooth-specification, transport layer, middleware protocol group, Bluetooth profiles

WEEK 3 : WLL –generic WLL architecture, technologies, broadband wireless access, IEEE 802.16 –differences between IEEE 802.11 and 802.16,physical layer, data link layer

UNIT II WIRELESS INTERNET

WEEK 4 : Introduction –wireless internet, address mobility, inefficiency of transport layer and application layer protocol

WEEK 5: mobile IP – simultaneous binding, route optimization, mobile IP variations, handoffs, IPv6 advancements, IP for wireless domain, security in mobile IP

WEEK 6: TCP in wireless domain – TCP over wireless , TCPs - traditional, snoop, indirect, mobile, transaction- oriented, impact of mobility.

WEEK 7: CYCLE TEST 1

WEEK 8:

UNIT III AD-HOC WIRELESS NETWORK AND WIRELESS SENSOR NETWORK

WEEK 9: Introduction, issues –medium access scheme, routing, multicasting, transport layer protocol, pricing scheme.

WEEK 10: QoS provisioning, self-organization, security, addressing, service discovery

WEEK 11: energy management, deployment consideration, ad-hoc wireless internet.

WEEK12:

UNIT IV WIRELESS SENSOR NETWORK

WEEK 13: Introduction – applications of sensor network, comparisons with MANET, issues and design challenges

WEEK 14: architecture – layered and clustered , data dissemination, data gathering, Mac protocols, location discovery

WEEK 15: quality of sensor network – coverage and exposure, zigbee standard

WEEK 16: SECOND CYCLE TEST

UNIT V RECENT ADVANCES IN WIRELESS NETWORK

WEEK 18: UWB radio communication- operation of UWB systems, comparisons with other technologies, major issues- advantages and disadvantages

WEEK 19.: wi-fi systems- service provider models, issues, interoperability of wi-fi and WWAN, multimode 802.11 – IEEE 802.11a/b/g software radio-based multimode system, meghadoot architecture -802.11 phone, fundamentals of UMTS

WEEK 20: MODEL THEORY EXAM (5 UNITS)

REFERENCES:

1. C.Siva Ram Murthy and B.S. Manoj, “Ad-hoc wireless networks-architecture and protocols”, Pearson education, 2nd, 2005.
2. Kaveh Pahlavan and Prashant Krishnamurthy, “Principle of Wireless network- A unified approach”, Prentice Hall, 2006.
3. Jochen Schiller, “Mobile Communication”, Pearson education, 2nd edition 2005.
4. William Stallings, “Wireless Communication and Networks”, Prentice Hall, 2nd edition, 2005.
5. Clint Smith and Daniel Collins, “3G wireless networks”, Tata Mcgraw Hill, 2nd edition, 2007..

CP7022 SOFTWARE DESIGN

UNIT I SOFTWARE DESIGN PRINCIPLES

WEEK 1: Introduction – Design process – Managing complexity – Software modeling and notations

WEEK 2: Abstraction – Modularity – Hierarchy – Coupling - Cohesion

WEEK 3 : Design guidelines andchecklists – Refactoring

UNIT II OO DESIGN

WEEK 4 : Object model – Classes and objects – Object oriented analysis

WEEK 5: Key abstractions and mechanisms – Object oriented design – Identifying design elements

WEEK 6: Detailed design – Case studies..

WEEK 7: CYCLE TEST 1

WEEK 8: CYCLE TEST 1

UNIT III DESIGN PATTERNS

WEEK 9: Introduction to patterns – Design context.

WEEK 10: Reusable solutions – Documenting reusable solutions

UNIT IV FUNCTION AND SERVICE ORIENTED DESIGNS

WEEK 10: Structural decomposition – Detailed Design – Function oriented design Case study – Services – Service identification

WEEK 11: Service design – Service composition – choreography and orchestration

WEEK 12 : Service oriented design Case study

WEEK 13: SECOND CYCLE TEST

UNIT V USER CENTERED DESIGN AND DESIGN REVIEW

WEEK 14 : REVISION (1-4 UNITS)

WEEK 15: Introduction to user centered design – Use in context – Interface and interaction

WEEK 16: User centered design principles – Task analysis – Evaluation

WEEK 17: Introduction to design review– Testing the design – Walk throughs – Review against check lists.

WEEK 18: MODEL THEORY EXAM (5 UNITS)

WEEK 19: MODEL PRACTICAL EXAM

REFERENCES:

1. Grady Booch et al., "Object Oriented Analysis and Design with Applications", 3rd Edition, Pearson, 2010.
2. Carlos Otero, "Software Engineering Design: Theory and Practice", CRC Press, 2012
3. David Budgen, "Software Design", 2nd Edition, Addison Wesley, 2003
4. Alan Shalloway and James R Trott, "Design Patterns Explained: A New Perspective on Object-Oriented Design", 2nd Edition, Addison-Wesley Professional, 2004
5. Hassan Gomaa, "Software Modeling and Design", Cambridge University Press, 2011
6. Eric Gamma et al., "Design Patterns: Elements of Reusable Object-Oriented Software", Addison-Wesley Professional, 1994
7. Ian Sommerville, "Software Engineering", 9th Edition, Addison-Wesley, 2010
8. M B Rosson and J M Carroll, "Usability Engineering: Scenario-Based Development of Human-Computer Interaction", Morgan Kaufmann, 2002.

NE7010 NEXT GENERATION NETWORKS

UNIT I INTRODUCTION

WEEK 1: Evolution of public mobile services - motivations for IP based services, Wireless IP network architecture – 3GPP packet data network architecture

WEEK2: Introduction to next generation networks -Changes, Opportunities and Challenges, Technologies,

WEEK 3: Networks, and Services, Next Generation Society, future Trends.

UNIT II IMS AND CONVERGENT MANAGEMENT

WEEK4 : IMS Architecture - IMS services, QoS Control and Authentication, Network and Service management for NGN, IMS advantages

WEEK 5: Next Generation OSS Architecture - standards important to OSS architecture, Information framework

WEEK 6: OSS interaction with IMS, NGN OSS function/information view reference model, DMTF CIM.

WEEK 7: CYCLE TEST-I

UNIT III MPLS AND VPN

WEEK 7:. Technology overview –MPLS & QoS, MPLS services and components –

WEEK 8: layer 2 VPN, layer 2 internetworking, VPN services, signaling, layer 3 VPN –Technology overview,

WEEK 9: Remote Access and IPsec integration with MPLS VPN..

UNIT IV MULTICAST

WEEK 10: MPLS Multicast VPN overview – Applications, examples, IPv6 and MPLS

WEEK 11: Technology overview, Future of MPLS –Integrating IP and optical networks,

WEEK 12: Future layer 3 services, future layer 2 services.

WEEK13: CYCLE TEST 2

UNIT V NGN MANAGEMENT

WEEK 14: REVISION (1-4)UNITS

WEEK 15: Network Management and Provisioning – Configuration

WEEK 16: Accounting, performance, security, case study for MPLS

WEEK 17: Future enhancements – Adaptive self healing networks

MODEL THEORY EXAM (5 UNITS)

WEEK 18: MODEL THEORY EXAM (5 UNITS)

REFERENCES:

1. Thomas Plavyk, “Next generation Telecommunication Networks, Services and Management”, Wiley & IEEE Press Publications, 2012.
2. Neill Wilkinson, “Next Generation Network Services”, John Wiley Publications, 2002.
3. Monique J. Morrow, “Next Generation Networks”, CISCO Press, 2007.
4. Robert Wood, “MPLS and Next Generation Networks: Foundations for NGN and Enterprise Virtualization”, CISCO Press, 2006.

5. Ina Minie, Julian Lucek, “MPLS enabled Applications – Emerging developments and new technologies”, 3rd edition, Wiley. 2011

CP7029 INFORMATION STORAGE MANAGEMENT

UNIT I INTRODUCTION TO STORAGE TECHNOLOGY

WEEK 1: Review data creation and the amount of data being created and understand the value of data to a business

WEEK 2: challenges in data storage and data management, Solutions available for data storage

WEEK 3: Core elements of a data center infrastructure, role of each element in supporting business activities.

UNIT II STORAGE SYSTEMS ARCHITECTURE

WEEK 3: 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

WEEK 4: logical constructs of a physical disk, access characteristics, and performance Implications, 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

WEEK 5: Compare and contrast integrated and modular storage systems ,High-level architecture and working of an intelligent storage system.

WEEK 6: CYCLE TEST 1

WEEK 7: CYCLE TEST 1

UNIT III INTRODUCTION TO NETWORKED STORAGE

WEEK 7: Evolution of networked storage, Architecture, components, and topologies of FC-SAN, NAS, and IP-SAN

WEEK 8 : Benefits of the different networked storage options, understand the need for long-term archiving solutions and describe how CAS full fill the need

WEEK 9: understand the appropriateness of the different networked storage options for different application environments

WEEK10: MODEL PRACTICAL EXAMINATION

UNIT IV INFORMATION AVAILABILITY, MONITORING & MANAGING DATACENTER

WEEK 10: 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

WEEK11. 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

WEEK 12 : 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

WEEK 13: CYCLE TEST 2

UNIT V SECURING STORAGE AND STORAGE VIRTUALIZATION 9

WEEK 14: block-level and file-level virtualization technologies and processes

WEEK 15: Information security, Critical security attributes for information systems, Storage security domains

WEEK 16: List and analyzes the common threats in each domain, Virtualization technologies

WEEK 17: MODEL THEORY EXAM (5 UNITS)

WEEK 18: MODEL THEORY EXAM (5 UNITS)

WEEK 19: MODEL PRACTICAL EXAMINATION

REFERENCE BOOKS:

1. EMC Corporation, Information Storage and Management, Wiley, India.
2. Robert Spalding, “Storage Networks: The Complete Reference“, Tata McGraw Hill ,Osborne, 2003.
3. Marc Farley, “Building Storage Networks”, Tata McGraw Hill ,Osborne, 2001.
4. Additional resource material on www.emc.com/resource-library/resource-library.esp
