Department of Information Technology
Lesson Plan
Analysis and Design of Algorithms (PE-IT-S310A)
Class : B.Tech. 6th Sem.

Lecture No.	Topic Name
L1	**Unit-1 Introduction** to Algorithms, Analysiz of algorithms
L2	Designing techniques of algorithms
L3	Concept of algorithmic efficiency, Run time analysis of algorithms
L4	Asymptotic Notations
L5	**Divide and conque**r: Structure of divide and conquer algorithms
L6	Binary search, Quick sort
L7	Strassen Multiplication
L8	Analysis of divide and conquer run time recurrence relations.
L9	**Unit 2: Greedy Method:** Overview of the greedy paradigm
L10	Exact optimization solution (minimum cost spanning tree),
L11	Approximate solution (Knapsack problem),
L12	Singles source shortest paths
L13	**Dynamic programming:** Overview, difference between dynamic programming and divide and conquer
L14	Shortest path in graph
L15	Matrix multiplication
L16	Travelling salesman problem
L17	Longest common sequence.
L18	**Unit 3: Back tracking:** Overview, 8-queen problem
L19	Solution to Knapsack problem using Backtracking approach
L20	**Branch and bound:** LC searching Bounding
L21	FIFO branch and bound
L22	LC branch and bound application: 0/1 Knapsack problem
L23	LC branch and bound application: Traveling Salesman Problem
L24	**Unit 4: Graph Traversal:** Overview
L25	Depth first search
L26	Breadth first search
L27	**Trees**: Review of trees, Binary search tree
L28	Traversal, Insertion & Deletion in Binary Search Tree
L29	B-Trees, B+ Trees
L30	Basic operations on B Trees.
L31	**Computational Complexity**: Complexity measures
L32	Polynomial Vs non-polynomial time complexity
L33	NP hard problem with example
L34	NP Complete problem with example
L35	Revision / Old University Papers Discussions
L36	Revision / Old University Papers Discussions

Department of Information Technology
Lesson Plan
E-Commerce (OE-IT-306A)
Class : B.Tech. 6th Sem.

Lecture No.	Topics Name
L1	**UNIT-1: INTRODUCTION**
L2	Definition of Electronic Commerce
L3	E-Commerce: technology and prospects
L4	Incentives for engaging in electronic commerce
L5	Needs of E-Commerce
L6	Advantages and Disadvantages
L7	Framework of E-Commerce
L8	classification of E-commerce
L9	Impact of E-commerce on business
L10	E-Commerce Models
L11	**UNIT-2: NETWORK INFRASTRUCTURE FOR E- COMMERCE**
L12	Internet and Intranet based E-commerce-Issues
L13	EDI
L14	Network Infrastructure
L15	Intranet,LAN,MAN,WAN
L16	Network protocols,
L17	The Internet Hierarchy
L18	Basic Blocks of e-commerce
L19	Networks layers & TCP/IP protocols
L20	The Advantages of Internet
L21	World Wide Web
L22	**UNIT-3:WEB SECURITY**
L23	Security Issues on web
L24	Importance of Firewall, components of Firewall
L25	Types of attack
L26	Network Security
L27	Encryption techniques
L28	Symmetric Encryption: Keys and data encryption standard
L29	Digital Signatures
L30	**UNIT-4:ELECTRONIC PAYMENTS: Overview**
L31	The SET protocol
L32	Payment Gateway
L33	SEPP
L34	Architecture of SEPP
L35	online Banking.E- Commerce Law
L36	Electronic Cash, Smart Cards and Electronic Payment Systems
L37	Credit Card Based Electronic Payment Systems
L 38	Risks and Electronic Payment Systems.

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Lecture No.	Topics Name
L-1	**Unit-1 Introduction**
	Introduction about linux
L-2	Basic concepts of the operating system, Commands
L-3	Shells and Processes
L-4	users and groups
L-5	file system and directories
L-6	Kernel tasks, GRUB and LILO
L-7	System configuration upgrade and network installation, disk partitioning, post-install system customization & upgrade, dpkg
L-8	APT package installation, remove, upgrade & query, semiautomatic system installation
L-9	**Unit-2 Linux Networking**
	Basic concepts of networking, network packets
L-10	TCP/IP protocol suit, ARP
L-11	IP addresses and network mask
L-12	subnets & routing
L-13	**Network File System (NFS)**
	file system sharing or the network, RPC services
L-14	nfs servers & clients sides,nfs configuration, statistic &auto mount configuration
L-15	**Network Information Service (NIS)** Centralized authentication systems; sharing user and host information or the network; IS server and client sides and configuration; compatibility mode; net group; security issues
L-16	**Unit-3 Integrating Linux & Windows** Samba server on Linux for centralized window logon; file sharing and printing, samba client; samba installation and configuration
L-17	Dual Boot: running windows and Linux on the same PC, Unix and windows password
L-18	Elements of windows networking, GRUB and NT Boot loaders; accessing windows files systems from Linux and vice versa
L-19	Net BIOS SMB\ \ CIFS protocols
L-20	domain controller
L-21	Overview of Unix authentication and naming service; introduction to LDAP: (DC); (OU); (CN); Schemas; IDIF format; services; polls and commands; server and client sides; Open LDAP installation and configuration; LDAP applications
L-22	Shell scripting, syntax of brash; looping; case statement; function; command substitution; awk, grep, sed. Startup and Run Levels. Scheduled jobs. Boot up and login process sequence; run levels; startup scripts; scheduling jobs with at and cron

L-23	**Unit-4 Linux Security** System vulnerabilities, port scanning, encryption, encrypted services and connections
L-24	PGP/GPG intrusion protection: tcp wrappers IP- firewalls, NAT and DMZ
L-25	Intrusion detection systems: tripwire, secure system management practices
	Email Server steps of email transaction, email envelope and headers
L-26	SMTP servers, IMAP and POP3 servers E-mail relay, postfix configuration, spam and viruses
L-27	**Domain Name Server** Host name resolution; domain name hierarchy; DNS zones; configuration of master, slave and caching DNS servers with BIND 9

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Department of Information Technology
Lesson Plan
Software Engineering (PC-IT-302A)
Class : B.Tech. 6th Sem.

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Lecture No.	Topics Name
L-1	**Unit-01 :**Program vs. software products, emergence of software engineering
L-2	Software Characteristics, Applications, Software crisis.
L-3	Software life cycle, models: waterfall, prototype, evolutionary and spiral model
L-4	Project management concepts
L-5	Software process and project metrics Project planning, project size estimation metrics
L-6	Project estimation techniques, empirical estimation techniques
L-7	COCOMO, A Heuristic estimation techniques, staffing level estimation
L-8	Risk analysis and management
L-9	Project scheduling and tracking
L-10	Revision of Unit 01
L-11	**Unit- 02**:Requirements engineering
L-12	Prototyping methods and tools
L-13	Data Modeling, Functional modeling and information flow
L-14	Data flow diagrams, Behavioral Modeling, The mechanics of structured analysis
L-15	Creating entity/relationship diagram, data flow model, control flow model,data dictionary
L-16	Design concepts and principles: the design process
L-17	.Cohesion and its types
L-18	Coupling and its types
L-19	Data modeling, data structures, databases and the data warehouse
L-20	Transform flow, Transaction flow; Transform mapping; Refining the architectural design
L-21	Revision of unit 2
L-22	**Unit-03 :**Software Testing Techniques, software testing fundamentals
L-23	Testing objectives, principles, testability
L-24	Test case design, Unit testing: white box testing, basic path testing: Control structure testing
L-26	Black box testing, testing for specialized environments
L-27	Software Testing Strategies: Verification and validation, Integration testing
L-28	Alpha and beta testing. System testing: Recovery testing, security testing, stress testing performance testing
L-29	Software re-engineering: Reverse engineering
L-30	Revision of Unit 3
L-31	**Unit-04:** Software Reliability and Quality Assurance: Quality concepts
L-32	Software quality assurance, SQA activities
L-33	Cost impact of software defects, defect amplification and removal
L-34	Formal technical reviews review reporting and record keeping, review guidelines
L-35	The ISO 9000 Quality standards
L-36	SEI-CMM Capability Maturity Model
L-37	Computer Aided Software Engineering:building block
L-38	Report Writing for project
L-39	Real world challenges in carring out Project

L-40	Discussion regarding Design of test cases for different projects
L-41	Ethics for report writing and project management skills
L-42	Revision/ Previous year Paper Discussion
L-43	Revision/Previous year Paper Discussion
L-44	Revision / Previous year Paper Discussion