

**Lecture Planning Starting w.e.f January 2018**

**Name of the Institute : Aravali College of Engineering & Management**

**Name of teacher with designation: Ms. Ekta Dagar, Assistant Professor**

**Department: Computer Science**

**Subject: Intelligent Systems**

| Month   | Class    | Topic/ Chapter to be covered   | Academic Activity | Test / Assignment  |
|---------|----------|--|-------------------|--|
|         |          | SECTION-A  |                   |  |
| January | C01      | Foundational issues in intelligent systems: foundation and history of AI, AI problem, techniques- AI programming languages |                   |  |
|         | C02      | Problem space and searches   |                   |  |
|         | C03-C04  | Blind search strategies: bfs, dfs, depth limited   |                   |  |
|         | C05      | Blind search strategies: unidirectional, bidirectional search techniques   |                   |  |
|         | C06-C07  | Heuristic search strategies: hill climbing, steepest ascent hill climbing algorithm  |                   |  |
|         | C08      | Best first searching algorithm   |                   |  |
|         | February | C09  | A* algorithm      | Case Study on the Scope of Artificial Intelligence in the next 10 years in India |
| C10     |          | AO* algorithm  |                   |  |
| C11     |          | Game playing algorithms: min-max algorithm   |                   |  |
| C12     |          | Game playing algorithms: alpha beta pruning.   |                   | Assignment 1   |
|         |          |  |                   |  |
|         |          |  |                   |  |
|         |          | SECTION B  |                   |  |
|         | C13      | knowledge representation issues, predicate logic   |                   |  |
|         | C14      | logic programming, constraint propagation  |                   |  |
|         | C15      | Propositional Calculus   |                   |  |
|         | C16      | Rule based deduction system  |                   | Test 1   |
|         | C17      | knowledge representation using rules   |                   |  |
|         | C18      | Semantic nets  |                   |  |
|         | C19      | Frames   |                   |  |
|         | C20      | Inheritance  | Presentation-1    |  |
|         |          |  |                   |  |
|         |          | SECTION C  |                   |  |
| March   | C21      | Reasoning under uncertainty, probability   |                   |  |
|         | C22      | Baye's probabilistic interferences   |                   |  |
|         | C23      | Dempster shafer theory, heuristic methods  |                   |  |
|         | C24      | Symbolic reasoning under uncertainty   |                   |  |
|         | C25      | Reasoning: statistical , fuzzy   |                   |  |
|         | C26      | Temporal reasoning   |                   |  |
|         | C27      | Non-monotonic reasoning  |                   | Assignment 2   |
|         |          |  |                   |  |
|         |          | SECTION D  |                   |  |
|         | C28      | Planning, Planning in situational calculus   |                   |  |
|         | C29      | Representation for planning, partial order planing algorithm   |                   |  |
|         | C30      | Learning: learning from examples, discovery as learning  |                   | Test 2   |
|         | C31      | Learning by analogy, explanation based learning  |                   |  |
| April   | C32      | Neural nets, genetic algorithms  |                   |  |
|         | C33      | Priciples of natural language processing, rule based system architecture   |                   |  |
|         | C34      | Expert system architecture   |                   |  |
|         | C35      | Knowledge acquisition concepts   | Presentation-2    |  |
|         | C36      | AI application to robotics, current trends in intelligent systems  |                   |  |

Name of teacher with designation: Seema Rawat ( Assistant Professor)

Department: Computer Science Engineering

Subject : principal of software engineering

| Month | Class  | Topic/ Chapter to be covered  | Academic Activity                  | Test / Assignment                             |
|-------|--|---|------------------------------------|---|
| Jan   | C01  | The process, software products, emergence of software engineering, evolving role of software,   | Presentation on SDLC               | MCQ Related to SDLC                           |
|       | C02  | software life cycle models  |                                    |   |
|       | C03  | software life cycle models  |                                    |   |
|       | C04  | Software Characteristics, Applications, Software crisis.  |                                    |   |
|       | C05  | Project management concepts:- software process and project metrics  |                                    |   |
|       | C06  | Project planning, project size estimation metrics, project estimation Techniques, empirical estimation techniques.  |                                    |   |
|       | C07  | COCOMO- A Heuristic estimation techniques   |                                    |   |
| Feb   | C08  | Staffing level estimation, team structures, staffing, risk analysis and management, project scheduling and tracking.  | Presentation on Project Scheduling | SRS documentation                             |
|       | C09  | Requirements engineering, system modeling and simulation Analysis principles modeling, partitioning Software, prototyping: , Prototyping methods and tools; Specification principles, Representation, the software requirements specification and reviews Analysis Modeling:                                      |                                    |   |
|       | C10  | Data Modeling, Functional modeling and information flow: Data flow diagrams, Behavioral Modeling; The mechanics of structured analysis: Creating entity/ relationship diagram, data flow model, control flow model, the control and process specification; The data dictionary; Other classical analysis methods. |                                    |   |
|       | C11  | <b>System Design:</b> Design concepts and principles: the design process: Design and software quality   |                                    |   |
|       | C12  | Design principles; Design concepts: Abstraction, refinement, modularity   |                                    |   |
|       | C13  | Software architecture, control hierarchy, structural partitioning, data structure, software procedure, information hiding;  |                                    |   |
|       | C14  | Effective modular design: Functional independence,  |                                    |   |
|       | C15  | Cohesion, Coupling;   |                                    |   |
| March | C16  | Design Heuristics for effective modularity; The design model: Design documentation.   |                                    | Assignment on Software Testing Techniques     |
|       | C17  | Software architecture, Data Design: Data modeling, data structures, databases and the data warehouse, Analyzing alternative Architectural Designs ,architectural complexity   |                                    |   |
|       | C18  | Mapping requirements into a software architecture; Transform flow, Transaction flow; Transform mapping; Refining the architectural design.  |                                    |   |
|       | C19  | Software Testing Techniques, software testing fundamentals: objectives, principles, testability; Test case design   |                                    |   |
|       | C20  | white box testing   |                                    |   |
|       | C21  | Black box testing   |                                    |   |
|       | C22  | Software Testing Strategies: Verification and validation, Unit testing, Integration testing,; Validation testing, alpha and beta testing;   |                                    |   |
|       | C23  | System testing: Recovery testing, security testing, stress testing, performance testing; The art of debugging, the debugging process debugging approaches   |                                    |   |
| C24   | Software re-engineering , reverse engineering ,restructuring, forward engineering. |   |                                    |   |
| April | C25  | Software re-engineering , reverse engineering ,restructuring, forward engineering.  |                                    | Assignment on Software Re-engineering concept |
|       | C26  | :Quality concepts, Software quality assurance , SQA activities; Software reviews  |                                    |   |
|       | C27  | cost impact of software defects, defect amplification and removal; formal technical reviews   |                                    |   |
|       | C28  | The review meeting, review reporting and record keeping, review guidelines; Formal approaches to SQA; Statistical software quality assurance; software reliability  |                                    |   |
|       | C29  | Measures of reliability and availability ,The ISO 9000 Quality standards: The ISO approach to quality assurance systems, The ISO 9001 standard, Software Configuration Management   |                                    |   |
|       | C30  | Computer Aided software Engineering: CASE, building blocks  |                                    |   |
|       | C31  | Integrated case environments  |                                    |   |
|       | C32  | Architecture, repository: CASE  |                                    |   |

Name of teacher with designation: RAJESH ADHANA Asst. Prof

Department: CSE

Subject : Coputer Network

| Month  | Class | Topic/ Chapter to be covered  | Academic Activity | Test / Assignment |
|--------|-------|---|-------------------|-------------------|
| Jan-18 | C01   | <b>SECTION A-Introduction to Computer Networks,</b>   |                   |                   |
| Jan-18 | C02   | Introduction to Computer Networks, Example networks ARPANET, Internet, Private Networks                     |                   |                   |
| Jan-18 | C03   | Network Topologies: Bus-, Star-, Ring-, Hybrid, Tree - Complete - Irregular-Topology                        |                   |                   |
| Jan-18 | C04   | Types of Networks : Local Area Networks, Metropolitan Area Networks, Wide Area Networks                     |                   |                   |
| Jan-18 | C05   | Layering architecture of networks, OSI model, Functions of each layer, Services and Protocols of each layer |                   |                   |
|        | C06   | REVISION  |                   | ASSIGNMENT/TEST   |
|        |       | <b>SECTION B</b>  |                   |                   |
| Jan-18 | C07   | Introduction, History of TCP/IP, Layers of TCP/IP, Protocols  |                   |                   |
| Feb-18 | C08   | Internet Protocol, Transmission Control Protocol ,  |                   |                   |
| Feb-18 | C09   | User Datagram Protocol, IP Addressing, IP address classes   |                   |                   |
| Feb-18 | C10   | Subnet Addressing, Internet Control Protocols   |                   |                   |
| Feb-18 | C11   | ARP, RARP, ICMP   |                   |                   |
| Feb-18 | C12   | Application Layer, Domain Name System   |                   |                   |
| Feb-18 | C13   | Email – SMTP, POP,IMAP, FTP   |                   |                   |
| Feb-18 | C14   | NNTP, HTTP, Overview of IP version 6.   |                   |                   |
| Feb-18 | C15   | REVISION  |                   | ASSIGNMENT/TEST   |
|        |       | <b>SECTION C</b>  |                   |                   |
| Mar-18 | C16   | Introduction to LANs, Features of LANs, Components of LANs, Usage of LANs                                   |                   |                   |
| Mar-18 | C17   | LAN Standards, IEEE 802 standards   |                   |                   |
| Mar-18 | C18   | Channel Access Methods, Aloha   |                   |                   |
| Mar-18 | C19   | CSMA, CSMA/CD, Token Passing  |                   |                   |
| Mar-18 | C20   | Ethernet, Layer 2 & 3 switching, Fast Ethernet and Gigabit Ethernet, Token Ring                             |                   |                   |
| Mar-18 | C21   | LAN interconnecting devices: Hubs,  |                   |                   |
| Mar-18 | C22   | Switches ,Bridges, Routers, Gateways  |                   |                   |
| Mar-18 | C23   | REVISION  |                   | ASSIGNMENT/TEST   |
|        |       | <b>SECTION D</b>  |                   |                   |
| Mar-18 | C24   | Introduction of WANs, Routing, Congestion Control   |                   |                   |
| Mar-18 | C25   | WAN Technologies, Distributed Queue Dual Bus (DQDB)   |                   |                   |
| Mar-18 | C26   | Synchronous Digital Hierarchy (SDH)/ Synchronous Optical Network (SONET)                                    |                   |                   |
| Mar-18 | C27   | Asynchronous Transfer Mode (ATM)  |                   |                   |
| Mar-18 | C28   | Frame Relay, Wireless Links   |                   |                   |
|        |       | <b>SECTION E</b>  |                   |                   |
| Mar-18 | C29   | Remote Monitoring Techniques: Polling, Traps  |                   |                   |
| Apr-18 | C30   | Performance Management  |                   |                   |
| Apr-18 | C31   | Class of Service, Quality of Service  |                   |                   |
| Apr-18 | C32   | Security management, Firewalls  |                   |                   |
| Apr-18 | C33   | VLANs, Proxy Servers  |                   |                   |
| Apr-18 | C34   | Introduction to Network Operating Systems: Client-Server infrastructure                                     |                   |                   |
| Apr-18 | C35   | Windows NT/2000   |                   |                   |
| Apr-18 | C36   | REVISION  |                   | ASSIGNMENT/TEST   |

Name of teacher with designation: RAJESH ADHANA Asst. Prof

Department: CSE  
Subject : SPSA

| Month  | Class | Topic/ Chapter to be covered   | Academic Activity | ASSIGNMENT/TEST |
|--------|-------|--|-------------------|-----------------|
| Jan-18 | C01   | <b>Section -A</b>  |                   |                 |
| Jan-18 | C02   | Evolution of Components Systems Programming, Assemblers, Loaders, Linkers,   |                   |                 |
| Jan-18 | C03   | Macros, Compilers, Software tools  |                   |                 |
| Jan-18 | C04   | Text editors, Interpreters and program generators  |                   |                 |
| Jan-18 | C05   | Debug Monitors, Programming environment.   |                   |                 |
| Jan-18 | C06   | Compiler: Brief overview of compilation process, Incremental compiler, loader,   |                   |                 |
| Jan-18 | C07   | overlays Assembler: Problem statement, single phase and two phase assembler, symbol table;   |                   |                 |
| Feb-18 | C08   | Loader schemes, compile and go Loader, general loader schemes,   |                   |                 |
| Feb-18 | C09   | absolute loader, Subroutine linkage, Reallocating loader,  |                   |                 |
| Feb-18 | C10   | Direct linkage Loader,   |                   |                 |
| Feb-18 | C11   | Binders, Linking   |                   | ASSIGNMENT/TEST |
|        |       | <b>Section -B</b>  |                   |                 |
| Feb-18 | C12   | Macro language and macro-processor, macro instructions, features of macro facility,  |                   |                 |
| Feb-18 | C13   | Macro instruction arguments, conditional macro expansion,  |                   |                 |
| Feb-18 | C14   | macro calls with macro instruction, Defining macros.   |                   |                 |
| Feb-18 | C15   | Theoretical Concept of UNIX Operating System: Basic features of operating system; File structure:  |                   |                 |
| Feb-18 | C16   | CPU scheduling; Memory management: swapping, demand paging;  |                   |                 |
| Mar-18 | C17   | file system: block and fragments, inodes,  |                   |                 |
| Mar-18 | C18   | directory structure; User to user communication  |                   |                 |
|        |       |  |                   | ASSIGNMENT/TEST |
|        |       | <b>Section -C</b>  |                   |                 |
| Mar-18 | C19   | Getting Started with Unix: User names and groups, logging in; Format of Unix commands;   |                   |                 |
| Mar-18 | C20   | Changing your password;  |                   |                 |
| Mar-18 | C21   | Characters with special meaning; Unix documentation; Files and   |                   |                 |
| Mar-18 | C22   | directories; Current directory, looking at the directory contents,   |                   |                 |
| Mar-18 | C23   | absolute and relative pathnames, some Unix directories and files;  |                   |                 |
| Mar-18 | C24   | Looking at the file contents; File permissions; basic operation on files; changing permission modes; Standard files                        |                   |                 |
| Mar-18 | C25   | standard output; Standard input, standard error; filters and pipelines;  |                   |                 |
| Mar-18 | C26   | Processes; finding out about processes;  |                   |                 |
| Mar-18 | C27   | Stopping background process;   |                   |                 |
| Mar-18 | C28   | Unix editor vi. Text Manipulation: Inspecting files; File statistics; Searching for patterns; Comparing files;                             |                   |                 |
| Apr-18 | C29   | Operating on files; Printing files; Rearranging files; Sorting files;  |                   |                 |
| Apr-18 | C30   | Splitting files; Translating   |                   |                 |
| Apr-18 | C31   | characters; AWK utility  |                   | ASSIGNMENT/TEST |
|        |       | <b>Section -D</b>  |                   |                 |
| Apr-18 | C32   | Shell Programming: Programming in the Bourne and C-Shell;  |                   |                 |
| Apr-18 | C33   | Wild cards; Simple shell programs; Shell variables;  |                   |                 |
| Apr-18 | C34   | Shell programming constructs; interactive shell scripts; Advanced features.  |                   |                 |
| Apr-18 | C35   | System Administration: Definition of system administration; Booting the system; Maintaining user accounts; File systems and special files; |                   |                 |
| Apr-18 | C36   | Backups and restoration; Role and functions of a system manager. Overview of the Linux operating system                                    |                   |                 |
| Apr-18 | C37   | Revision   |                   | ASSIGNMENT/TEST |

Name of teacher with designation :S P Awasthi , Assistant Professor

Department : Computer Science & Engineering

Subject: ADA

| Month    | Class | Topic/Chapter covered  | Academic activity | Test/assignment |
|----------|-------|--|-------------------|-----------------|
| January  | C01   | Brief review of graph  |                   |                 |
| January  | C02   | Sets and disjoint sets, union  |                   |                 |
| January  | C03   | Sorting and searching algorithms and their analysis in terms of space and time complexity  |                   |                 |
| January  | C04   | Divide and Conquer: General method, binary search  |                   |                 |
| January  | C05   | binary search  |                   |                 |
| January  | C06   | merge sort, quick sort   |                   |                 |
| January  | C07   | selection sort   |                   |                 |
| January  | C08   | Strassen's matrix multiplication algorithms and analysis of algorithms for these problems. |                   |                 |
| February | C09   | Greedy Method: General method  |                   |                 |
| February | C10   | knapsack problem   |                   | TEST            |
| February | C11   | job sequencing with dead lines   |                   |                 |
| February | C12   | Minimum spanning trees   |                   | Assignment      |
| February | C13   | Single source paths and analysis of these problems   |                   |                 |
| February | C14   | Single source paths and analysis of these problems   |                   |                 |
| February | C15   | Dynamic Programming: General method  |                   |                 |
| February | C16   | optimal binary search trees  |                   |                 |
| February | C17   | O/I knapsack   |                   |                 |
| February | C18   | the traveling salesperson problem  |                   |                 |
| March    | C19   | 8 queen's problem  |                   |                 |
| March    | C20   | graph colouring  |                   |                 |
| March    | C21   | Hamiltonian cycles, analysis of these problems   |                   |                 |
| March    | C22   | Branch and Bound: Method   |                   |                 |
| March    | C23   | O/I knapsack   |                   |                 |
| March    | C24   | efficiency considerations  |                   |                 |
| March    | C25   | Techniques for algebraic problems  |                   |                 |
| March    | C26   | Techniques for algebraic problems  |                   |                 |
| March    | C27   | traveling salesperson problem  |                   |                 |
| March    | C28   | some lower bounds on parallel computations   |                   |                 |
| April    | C29   | NP Hard problems   |                   |                 |
| April    | C30   | NP Complete Problems   |                   |                 |
| April    | C31   | Basic concepts   |                   | Assignment      |
| April    | C32   | NP hard graph  |                   |                 |
| April    | C33   | NP scheduling problems   |                   |                 |
| April    | C34   | NP scheduling problems   |                   |                 |
| April    | C35   | Some simplified NP hard problems.  |                   |                 |
| April    | C36   | Cook's theorem   |                   | TEST            |
| April    | C37   |  |                   |                 |