Lesson Plan Odd Semester 2022-23

Name of the Assistant Professor- Shama   **Subject**- Computer Science

Month	BCA (I sem) **Computer and Programming Fundamentals**	BCA (III Sem) **Fundamentals of database management system**	BCA (V Sem) **Artificial Intelligence**
September	Computer Fundamentals: Definition, Block Diagram along with its components, characteristics & classification of computers, Applications of computers in various fields. Memory: Concept of primary & secondary memory, RAM, ROM, types of ROM, flash memory, Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, CD, DVD. Assignment-1	Basic Concepts – Data, Information, Records and files. Traditional file – based Systems-File Based Approach-Limitations of File Based Approach, Database Approach-Characteristics of Database Approach, Database Management System (DBMS), Components of DBMS Environment, DBMS Functions and Components, Advantages and Disadvantages of DBMS, Roles in the Database Environment - Data and Database Administrator, Database Designers, Applications Developers and Users. Assignment-1	AI Concepts, Various definitions of AI, Knowledge, Knowledge Pyramid, People and Computers: What computers can do better that people, what people can do better than computers; Characteristics of AI Problems, Problem Representation in AI, Components of AI, AI Evolution, Application Areas of AI, History of AI, The Turing Test, The Revised Turing Test Assignment-1
October	Computer hardware & software: I/O devices, relationship between hardware and software, types of software, Operating system: Definition, functions of operating system, concept of multiprogramming, multitasking, multithreading, multiprocessing, time-sharing, real time, single-user & multi-user operating system. Test-1	Database System Architecture – Three Levels of Architecture, External, Conceptual and Internal Levels, Schemas, Mappings and Instances, Data Independence – Logical and Physical Data Independence, Classification of Database Management System, Centralized and Client Server architecture to DBMS. Test-1	Brute Force Search – Depth First/Breadth First Search Heuristic Search: Hill Climbing Heuristic Search: Hill Climbing Constraint Satisfaction, Mean End Analysis, Best First Search, A* Algorithm, AO* Algorithm, Beam Search Test-1

| November | Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation, Techniques of Problem Solving: Flowcharting, algorithms, pseudo code, decision table, Structured programming concepts
Programming methodologies: top-down and bottom-up programming. Computer Virus, WORMS, Trojan
Assignment-2
Test-2 | Data Models: Records- based Data Models, Object-based Data Models, Physical Data Models and Conceptual Modeling
Entity-Relationship Model – Entity Types, Entity Sets, Attributes Relationship Types, Relationship Instances and ER Diagrams.
Assignment-2
Test-2 | Expert System: Components of Expert System: Knowledge Base, Inference Engine, User Interface, Features of Expert System, Expert System Life Cycle, Categories of Expert System, Rule Based vs. Model Based Expert Systems, Advantages/Limitations of Expert System, Developing an Expert System: Identification, Conceptualization, Formalization, Implementation, Testing, Using an Expert System, Application Areas of Expert System
Assignment-2
Test-2 |
| December | Searching, Sorting, and Merging: Linear & Binary Searching, Bubble, Selection, and Insertion Sorting, Merging, Design of algorithms for searching, sorting and merging. Computer Languages: Analogy with natural language, machine language, assembly language, high-level language, language translators, characteristics of a good programming language.
Test-3 | Basic Concepts of Hierarchical and Network Data Model
Relational Data Model:-Brief History, Terminology in Relational Data Structure, Relations, Properties of Relations, Keys, Domains, Integrity Constraints over Relations, Base Tables and Views
Test-3 | Introduction, Need, Goal, Fundamental Problems in Natural Language Understanding, How People overcome Natural Language Problems, Speech Recognition: Introduction, Advantages and Approaches, Introduction to Robotics: Parts of a Robot, Controlling a Robot,
Intelligent Robots, Mobile Robots
Test-3 |

Subject/Month	September	October	November	December
B.Com CAV (V Sem) **SYSTEM ANALYSIS & DESIGN**	Fundamental of System: definition of system, characteristics, elements, Types of system System development life cycle Assignment	Techno-Economic Feasibility Role of system analyst The process of logical and physical design Test-1	Form design: input, output, form System testing, Auditing Assignment-2 Test-2	System maintenance, Threats to security and control measures. Test-3 Practical