Lesson Plan

Of

M.sc (cs)

September

2024-25

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD

LESSON PLAN FOR THE SESSION 2024-25(ODD SEMESTER)

Name of the Assistant Professor : Ms. Gurpreet Kaur **Class and Section: M.Sc-1st Year** **Subject: Discrete Mathematics** **Teaching Term: 01st August 2024 to 30th Nov 2024 (Excluding Diwali Break)**	
Week 1	Sets: Sets, Subsets, Equal Sets Universal Sets, Finite and Infinite Sets
Week 2	Operation on Sets, Union, Intersection and Complements of Sets, Cartesian Product, Cardinality of Set, Simple Applications, **Assignment.**
Week 3	Relations and functions: Properties of Relations, Equivalence Relation Partial Order Relation, Class **Test1**
Week 4	Function: Domain and Range, Onto, Into and One to One Functions, Composite and Inverse Functions.
Week 5	Propositional Logic: Proposition logic, basic logic, Logical Connectives
Week 6	Truth tables, Tautologies, contradiction
Week 7	Logical implication, Logical equivalence, Normal forms, **Class Test 2**
Week 8	Theory of Inference and deduction. Predicate Calculus: Predicates and quantifiers. Mathematical Induction.
Week 9	Matrices: Definition, Types of Matrices, Addition, Subtraction, Scalar Multiplication and Multiplication of Matrices, Class Test 3
Week 10	Adjoint and Inverse of a matrix. Determinants: Definition, Minors, Cofactors, Properties of Determinants.
Week 11	Applications of determinants in finding area of triangle, Solving a system of linear equations.
Week 12	Introduction to defining language, Kleene Closure, Arithmetic expressions, Chomsky Hierarchy, Regular expressions.

Week 13	Conversion of regular expression to Finite Automata
Week 14	NFA, DFA, Conversion of NFA to DFA, FA with output: Moore machine, Mealy machine.
Week 15	**Revision**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD

LESSON PLAN FOR THE SESSION 2024-25(ODD SEMESTER)

Name of the Assistant Professor: Ms Sandhya Chaudhary **Class And Section: M.sc(cs) 1st SEM** **Subject: Computer Fundamental and Programming in c** **Teaching Term: 1st August 2024 to 30th Nov 2024(Excluding Diwali Break)**	
Week 1	Computer Fundamentals: Concept of data and information; Components of Computer: Hardware Input Device, Output Device. CPU: Components of CPU; Memory and Storage Devices; Computer Software:
Week 2	System Software and Application Software; Functions of Operating System. Programming Languages: Machine,Assembly, High Level Language, 4GL; Language Translator; Linker, Loader;
Week 3	Classification of Computers: Micro, Mini, Mainframe, Super computer. Advantages of Computer, Limitations of Computer, .
Week 4	Range of Applications of Computer, Social concerns of Computer Technology: Positive and Negative Impacts, Computer Crimes, Viruses and their remedial solutions

Week 5	Problem Solving: Problem Identification, Analysis, Flowcharts, Decision Tables, Pseudo codes and algorithms, Program Coding, Program Testing and Execution.
Week 6	C Programming Fundamentals: Keywords, Variables and Constants, Structure of a C program. Operators &Expressions: Arithmetic, Unary, Logical, Bit-wise,
Week 7	Assignment & Conditional Operators, Library Functions,Control Statements: Looping using while, do...while, for statements, Nested loops; decision making using if...else, Else If Ladder; Switch, break, Continue and Goto statements.
Week 8	Arrays & Functions: Declaration and Initialization; Multidimensional Arrays. String: Operations of Strings;Functions: Defining & Accessing User defined functions,
Week 9	Function Prototype, Passing Arguments, Passing array as argument, Recursion, Use of Library Functions; Macro vs. Functions.
Week 10	Pointers: Declarations, Operations on Pointers, Passing to a function, Pointers & Arrays, Array of Pointers,Array accessing through pointers, Pointer to functions, Function returning pointers, Dynamic Memory Allocations.
Week 11	Structures and Union: Defining and Initializing Structure, Array within Structure, Array of Structure, Nesting of Structure,
Week 12	Pointer to Structure, Passing structure and its pointer to Functions; Unions: Introduction to Unions and its Utilities.
Week 13	Files Handing: Opening and closing file in C; Create, Read and Write data to a file; Modes of Files,
Week 14	Operationson file using C Library Functions; Working with Command Line Arguments. Program Debugging and types of errors.
Week 15	**Revision**

LESSON PLAN FOR THE SESSION 2024-25(ODD SEMESTER)

Name of the Assistant Professor : Ms. Kamiya Chugh **Class and Section: M.Sc-1st Year** **Subject: Web Development-1** **Teaching Term: 01st August 2024 to 30th Nov 2024(Excluding Diwali Break)**	
Week 1	Internet, Evolution of Internet, Types of Computer Network: LAN, WAN, MAN Internet Protocol, Internet Services, WWW, Working of Internet, Introduction to Intranet, DNS working, Configuring Internet Connection
Week 2	Connecting LAN to Internet; Client-Server environment: Single User, Multi User, Server, Workstation, Computer Network; Network Topologies; Network Protocols, **Class Test-1**
Week 3	E-Mail Concepts – Configuring EMail Program, Sending and Receiving Files through E-Mail, Fighting Spam, Sorting Mail, E-Mail mailing lists and avoiding E-Mail viruses. Assignment
Week 4	Popular web servers, Web Browsers; basic features of browsers: bookmarks, cookies, progress indicators, customization of browsers, browsing tricks, next generation web browsing, search engines; Hypertext Transfer Protocol (HTTP),
Week 5	URLOnline Chatting, Messaging, and Conferencing Concepts, Usenet newsgroup concepts: Reading UseNet newsgroup,Instant messaging, Web-Based chat rooms and discussion boards, **Class Test-2**
Week 6	Voice and Video conferencing. Streamlining Browsing, Keeping track of Favourite Websites, Web Security, Privacy, and SiteBlocking
Week 7	Understanding HTML, XHTML Syntax and Semantics, HTML Elements: Paragraph, Lists, Tables, Images,
Week 8	Frames, Forms, Linking to other Web Pages: External and Internal linking, Email Links **Assignment**
Week 9	Working with Background colors and Images; Marquee; Text Alignment and Text Formatting, Advanced Layout with Tables; Publishing HTML Pages.
Week 10	Introduction, Inline, Internal, External CSS, Linking CSS to Web Page.
Week 11	Introduction to JavaScript, Basic Syntax, Variables and Data types Statements, Operators, Literals, Functions, Objects, Arrays. **Class Test-3**
Week 12	Relation between XML and HTML, Goals of XML, Structure and Syntax of XML, Well Formed XML,
Week 13	DTD and its Structure, tree structures in data organization, Searching with XPath. **Class Test-4**
Week 14	**Revision**
Week 15	**Revision**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD

LESSON PLAN FOR THE SESSION 2024-25(ODD SEMESTER)

Name of the Assistant Professor:Ms. Poonam **Class And Section: M.sc(CS) 1st year** **Subject: Computer Science** **Teaching Term: 1st August 2024 to 22nd Nov 2024(Excluding Diwali Break)**	
Week 1	Introduction to Computer Network: Types of Networks, Network Topologies, OSI and TCP/IP Reference models
Week 2	Data Communications Concepts: Digital Vs. Analog communication; Parallel and Serial Communication; Synchronous, Asynchronous and Isochronous Communication;
Week 3	Communication modes: simplex, half duplex, full duplex; Multiplexing; **Class Test**
Week 4	Transmission media: Wired-Twisted pair, Coaxial cable, Optical Fibre, Wireless transmission: Terrestrial, Microwave, Satellite, and Infrared.
Week 5	Communication Switching Techniques: CircuitSwitching, Message Switching, Packet Switching. Data Link Layer Fundamentals: Framing.
Week 6	Error Detection, Forward Error Correction, Cyclic Redundancy Check codes for Error Detection, Flow Control.**Class Test**
Week 7	Media Access Protocols: ALOHA, Carrier Sense Multiple Access (CSMA), CSMA with Collision Detection (CSMA/CD), Token Ring, Token Bus.
Week 8	High-Speed LAN: Standard Ethernet, Fast Ethernet, Gigabit Ethernet,10G.
Week 9	Wireless LANs: IEEE 802.11, Bluetooth. Network Layer: IP Addressing and Routing.
Week 10	Network Layer Protocols: IPv4 (Header Formatand Services), ARP.

Week 11	ICMP (Error Reporting and Query message); IPv6 (Header Format and Addressing).
Week 12	Transport Layer: Process-to-Process Delivery: UDP, TCP; Application Layer: Domain Name System (DNS);
Week 13	SMTP; HTTP; WWW. Network Security: Security Requirements and attacks.
Week 14	Cryptography: Symmetric Key (DES, AES), Public Key Cryptography (RSA); Firewall.
Week 15	**Revision**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD

LESSON PLAN FOR THE SESSION 2024-25(ODD SEMESTER)

Name of the Assistant Professor: MS.NEETU

Class And Section: MSc(CS)-First Year(1st Sem)

Subject: Computer Organization and Architecture(24CSC201DS04)

Teaching Term: 1st Aug 2024 to 30th Nov 2024(Excluding Diwali Break)

Week 1	Number Systems: Binary, Octal and Hexadecimal, Integer and Floating-point-representation, Character codes: ASCII and EBCDIC. Boolean Algebra and Logic Gates: OR, AND, NOT, XOR Gates;
Week 2	De Morgan's theorem; Universal building blocks; Simplifying logic circuits : sum of product and product of sum form;
Week 3	Karnaugh Map simplification; Combinational logic blocks (Adders, Multiplexers, Encoders,Decoder), Sequential logic blocks (Latches, Flip-Flops, Registers, Counters).
Week 4	Register Transfer Language; Bus and memory Transfer; Micro operations: Arithmetic, Logic & Shift Micro operations
Week 5	Instructions Codes, Register reference, Memory Reference & Input-Output instructions, Instruction Cycle, Timing and Control, Interrupts; Design of Control unit: Hardwired-control unit, Micro-programmed control unit.
Week 6	General Register Organization, Stack Organization, Instruction Formats, Addressing Modes; Data Transfer & Manipulation Instructions.**TEST**
Week 7	Introduction to x86 Assembly Language programming:- Write a simple program to display a message on console. 2. Load, store, move, and exchange data between registers and memory. 3. Write a program to display a pyramid of numerals or alphabets of a given string
Week 8	4 Learn Basic syntax, instruction formats, and simple programs in Assembly Language of x86 Machines 5. Write a program using Macros. 6 Write a program to Load, store, move, and exchange data between registers and memory.
Week 9	7. Write a program to perform addition, subtraction, multiplication, and division Using x86 Arithmetic Instructions 8. Write a program to AND, OR, XOR, NOT, shift, and rotate operations using x86 Logical and Bit Manipulation Instructions 9. Implementing Branching in x86 Assembly Language
Week 10	Memory Hierarchy, Main Memory, Auxiliary Memory, Cache Memory, Virtual Memory.Input-Output Organization: Peripheral Devices, Input-Output interface,

Week 11	Asynchronous Data Transfer, Modes of transfer, Priority interrupt, Direct Memory Access (DMA), input-outpu processors (IOP), Serial communication. **REVISION**
Week 12	CISC and RISC - Features and Comparison, Pipeline and Vector Processing: Parallel processing, Pipelining, Arithmetic Pipeline, Instruction pipeline and Arrays Processors.
Week 13	Multi-processors, characteristics of multi-processors, Interconnection structures, Inter-processor Arbitration, **TEST**
Week 14	Inter-processor Communication and Synchronization, Cache Coherence.
Week 15	Revision

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD

LESSON PLAN FOR THE SESSION 2024-25(ODD SEMESTER)

Name of the Assistant Professor: Dr. Neha Jain **Class And Section: MSc [CS] Ist Year [1st Sem]** **Subject: Database Management Systems[24CSC201DS05]** **Teaching Term: 22nd July 2024 to 22nd Nov 2024(Excluding Diwali Break)**	
Week 1	Introduction : Characteristics of database approach , data models , DBMS Architecture and data independence, Database Languages, Classification of DBM , Database users and administrator.
Week 2	DBMS Environment : Database Access for applications Programs , Transaction Management , Database system Structure, Storage manager, Query Processor.
Week 3	E-R Modelling : Entity Types, Entity Set, Attribute and Key, Relationships,Relation Type.
Week 4	Role and Structural constraints , Weak entities, Enhanced ER model .Relational model :Introduction to the relational model, Integrity Constraint over Relations , Enforcing Integrity Constraints.
Week 5	Querying relational data, Introduction to views, Destroying/altering Tables and Views. Relational Algebra and Calculus : Relational Algebra , Set Operation , Selection and projection , renaming.
Week 6	Joins , Divisions, Example of Algebra overviews, Relational calculus : Tuple relational calculus, Domain relational calculus, Expressive power of Algebra and Calculus.
Week 7	Schema Refinement and Normalization : Problems cause by redundancy , Schema refinement in Database Design , Decomposition & amp; its properties.
Week 8	Problem related to decomposition, Functional Dependency.Normalization : First, Second ,Third Normal Forms, BCNF, Lossless join Decomposition , Dependency preserving Decomposition .
Week 9	Multi valued Dependencies, Fourth Normal Form . Transaction management : Acid Properties, Transactions and Schedule , Concurrent Execution of transaction .
Week 10	Serializability and recoverability .Concurrency Control : Introduction to Lock Management ,Lock Conversions , Dealing with Dead Locks , Concurrency without Locking , Recovery Techniques , Database Security .
Week 11	Introduction to MySQL/Oracle : Working with MySQL/Oracle ,Getting started , Modules of my SQL/Oracle .

Week 12	Invoking SQL*plus/MySQL Command-line client (‘My SQL) , Data Constraints , Operators .
Week 13	Data manipulation - Create , Modify , Insert, Delete and Update ; Searching , Matching and Oracle functions.
Week 14	**TEST**
Week 15	**Revision**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD

LESSON PLAN FOR THE SESSION 2024-25(ODD SEMESTER)

Name of the Assistant Professor: Dr. Neha Jain **Class And Section: MSc [CS]Final Year [3rd Sem]** **Subject: Visual Programming [17MCS23C2]** **Teaching Term: 22nd July 2024 to 22nd Nov 2024(Excluding Diwali Break)**	
Week 1	Introduction to Visual Basic:VB IDE , An overview of VB Project Types ,VB as event- driven & object –based language, Default Controls in Tool Box: Label box , Text box , Command button.
Week 2	List box ,Combo box ,Picture & Image box,Shape box, Timer, Option button,Check box ,& Frames . Programming with VB: Variables, Constants, Data types, Variable scope, Arithmetic operations, String operations, Built-in functions, I\O in VB .
Week 3	Branching and Looping statements, procedures ,Arrays, Collection.Working with Forms : working with multiple forms ; Loading, Showing and Hiding Forms; Creating forms at Run Time .
Week 4	Introduction to MDI forms . Dialog Boxes :Types of dialogue boxes, Working with common dialog box. Menu manipulation :introduction to menu editor, adding menus and its manipulation :modifying and deleting menu items, creating sub menus.
Week 5	Advanced control in vb introduction scroll bar ,slider control tress view, list view, rich text box Control.
Week 6	Toolbar , status bar, Progress bar, Cool bar, Image list ,Tab Strip **TEST.**
Week 7	Working with Graphics: Using Paint, Line, Circle,RGB and other related method.
Week 8	Manipulating graphics.File Handling in VB: Creating a file ,saving and opening files in Rich text box and picture box.
Week 9	Handling file operations .VB & Databases:The data controls and data Bounded controls.
Week 10	Using DAO,RDO,ADO
Week 11	Active X controls :Creating and Using Active X Controls
Week 12	Creating and Using Active X Documents.
Week 13	Active X EXE vs. Active X DLL.
Week 14	**TEST**

Week 15	Revision

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD

LESSON PLAN FOR THE SESSION 2024-25(ODD SEMESTER)

Name of the Assistant Professor: MS.Rupinder Kaur

Class :M.Sc(CS)

Subject: Computer Security

Teaching Term: 22nd July 2024 to 22nd Nov 2024(Excluding Diwali Break)

Week 1	The meaning of Computer Security, Computer Criminals, Methods of Defense,
Week 2	Elementary Cryptography: Substitution Ciphers, Transpositions Making "Good" Encryption Algorithms,
Week 3	The Data Encryption Standard,The AES Encryption Algorithm, Public Key Encryptions, Uses of Encryption. Class Test-1
Week 4	Secure Programs, Non-malicious Program Errors, viruses and other malicious code, Targeted Malicious code, controls Against Program Threats,**Assignment**
Week 5	Protection in General-Purpose operating system protected objects and methods of protection, File protection Mechanisms,
Week 6	User Authentication Designing Trusted O.S,Security polices, models of security, trusted O.S. design, Assurance in trusted OS. Class Test-2
Week 7	Security requirements, Reliability and integrity, Sensitive data, Inference, **Assignment**
Week 8	multilevel database, proposals for multilevel security. Security in Network: Threats in Network
Week 9	Network Security Controls, Firewalls, Intrusion Detection Systems, Secure E-mail.
Week 10	Administering Security: Security Planning, Risk Analysis, Organizational Security policies. Class Test-3
Week 11	Physical Security. Legal Privacy and Ethical Issues in Computer Security
Week 12	Protecting Programs and data, Information and the law, Rights of Employees and Employers
Week 13	Software failures, Computer Crime, Praia, Ethical issues in Computer Security, Case studies of Ethics.Class Test-4
Week 14	**REVISION**
Week 15	**REVISION**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD

LESSON PLAN FOR THE SESSION 2024-25(ODD SEMESTER)

Name of the Assistant Professor: Ms Sandhya Chaudhary **Class And Section: M.sc(cs)2nd year** **Subject: Operating system** **Teaching Term: 1st August 2024 to 30th Nov 2024 (Excluding Diwali Break)**	
Week 1	Operating systems overview: Operating systems as an extended machine & resource manager,Operating systems classification; Operating systems and system calls; Operating systems architecture.
Week 2	Process Management functions: Process model, hierarchies, and implementation; process states and
Week 3	transitions; multi-programming, multi-tasking, multi-threading; level of schedulers and scheduling algorithms.
Week 4	Memory Management and Virtual Memory : Logical versus Physical Address Space.
Week 5	Swapping, Contiguous Allocation, Paging, Segmentation,
Week 6	Segmentation with Paging, Demand Paging,Performance of Demanding Paging,
Week 7	Page Replacement, Page Replacement Algorithm, Allocation of Frames, Thrashing.
Week 8	Device Management functions: I/O devices and controllers, interrupt handlers, Types of I/O
Week 9	Software: Device independent I/O software, User-space I/O software, Terminal I/O software. Disk scheduling.
Week 10	File management functions: file naming, structure, types, access mechanisms, attributes and operations; directory structures and directory operations;
Week 11	file space allocations; file sharing, file locking; symbolic links; file protection and security: distributed file systems.
Week 12	Concurrent programming: sequential and concurrent process; precedence graph, Bernsterins
Week 13	condition; time dependency and critical code section, mutual exclusion problem; classical process co-ordination problems; deadlock handling, inter-process communication.
Week 14	Unix Operating System: Overview of UNIX OS in general and implementation of all above functions in Unix Operating System.

Week 15	**Revision**

K.L MEHTA DAYANAND COLLEGE FOR WOMEN,FARIDABAD

LESSON PLAN FOR THE SESSION 2024-25(ODD SEMESTER)

Name of the Assistant Professor: MS.NEETU

Class And Section: MSc(CS)-IInd Year(3rd Sem)

Subject:- ARTIFICIAL INTELLIGENCE(17MCS23DB3)

Teaching Term: 1st Aug 2024 to 30th Nov 2024(Excluding Diwali Break)

Week 1	Definition and applications of Artificial Intelligence, Problem solving: Defining problem as State space search
Week 2	Production systems , Problem characteristics, Search techniques: Brute force
Week 3	Heuristic search and their different searching techniques ,Types of knowledge, Inference rule
Week 4	Knowledge Representation: Logic based Knowledge representation, Rule based knowledge representation;
Week 5	Non-Monotonic reasoning, Knowledge representation based on probability and uncertainty.
Week 6	Knowledge representation schemes: Formal logic, Inference Engine, Semantic net, Frame, Scripts **REVISION**
Week 7	Expert System: Definition, Role of Knowledge in expert system, Architecture of Expert system
Week 8	Expert system development life cycle: Problem selection, Prototype construction,
Week 9	Formalization, Implementation, Evaluation, Knowledge acquisition: Knowledge engineer, Cognitive behavior, Acquisition techniques.
Week 10	Sensing, Speech recognition, Vision, Action. **REVISION**
Week 11	Learning and its different types, Planning, understanding.
Week 12	Neural Networks: Introduction, Comparison of artificial neural networks with biological neural ,Learning in neural networks, Perceptions, Back propagation networks
Week 13	Application of neural networks, Fuzzy logic: Definition, Difference between Boolean and Fuzzy logic, fuzzy subset **TEST**
Week 14	fuzzy membership function, fuzzy expert system, Inference process for fuzzy expert system, fuzzy controller

Week 15	**Revision**

Mock Test will be conducted in the month of October/November