Academic Lesson Plan of Winter 2023

Department : CSE	Semester : 3RD	Name of the Teaching Faculty : LOPAMUDRA SINGH
Subject : COMPUTER SYSTEM ARCHITECTURE	No. of Days/per week class allotted : 4Period/week	Semester from : 1ST AUGUST 2023
		No of Weeks : 15 Weeks
		Topic to be covered :
WEEK	**DAY**	**TOPIC**
1st Week	1st	Basic Structure of Computer Hardware
	2nd	Basic Structure of Computer Hardware
	3rd	Functional Units
	4th	Computer Components
2nd Week	1st	Perfermance Measure
	2nd	Memory Addressing & Operations
	3rd	Instruction & Instruction Sequencing
	4th	Fundamental to Instructions
3rd Week	1st	Operands
	2nd	Opcodes
	3rd	Instruction Format
	4th	Addressing Modes
4th Week	1st	Addressing Modes, Types
	2nd	Processor System
	3rd	Register Files
	4th	Complete Instruction Execution Fetch, Decode, Execution
5th Week	1st	Fetch, Decode, Execution
	2nd	Hardware Control
	3rd	Micro Program Control
	4th	Memory System
6th Week	1st	Memory Characteristics
	2nd	Memory Hierachy
	3rd	RAM & ROM Organizations
	4th	Inter Leaved Memory
7th Week	1st	Catche Memory
	2nd	Virtual Memory
	3rd	I/P, O/P System
	4th	I/P, O/P System
	1st	Modes of Data Transfer

8th Week	2nd	Programmed I/O Transfer
	3rd	Interrupt Driven I/O
	4th	Interrupt Driven I/O
9th Week	1st	DMA
	2nd	I/O Processor
	3rd	I/O Interface
	4th	Bus Architecture
10th Week	1st	Bus Architecture
	2nd	System Bus and its Types
	3rd	Types of System Bus, Data
	4th	Data, Address, Control
11th Week	1st	Bus Architecture
	2nd	Bus Architecture
	3rd	Basic Parameters of Bus Design
	4th	Basic Parameters of Bus Design
12th Week	1st	SCSI
	2nd	USB
	3rd	Parallel Processing
	4th	Parallel Processing
13th Week	1st	Linear Pipeline
	2nd	Linear Pipeline
	3rd	Multi Processor
	4th	Multi Processor
14th Week	1st	Flynn's Classification
	2nd	Flynn's Classification, Types
	3rd	Single Instruction Stream, Single Data Stream (SISD)
	4th	Single Instruction Stream, Multiple Data Stream (MISD)
15th Week	1st	Multiple Instruction Stream, Single Data Stream (MISD)
	2nd	Multiple Instruction Stream, Multiple Data Stream (MIMD)
	3rd	Doubt Clearing Class
	4th	Question Answer Discussion of Previous Year

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Academic Lesson Plan of Winter 2023

Department : CSE	Semester : 3RD	Name of the Teaching Faculty : SOMYASHREE SAMAL
Subject : DATA STRUCTURE	No. of Days/per week class allotted : 4Period/week	Semester from : 1ST AUGUST 2023
		No of Weeks : 15 Weeks
		Topic to be covered :

WEEK	DAY	TOPIC
1st Week	1st	Explain Data, Information and Data Types
	2nd	Define Data Structure
	3rd	Explain Different Operations of Data Structure
	4th	Explain ADT
2nd Week	1st	Discuss Algorithm and its Complexity
	2nd	Explain Time, Space Tradeoff
	3rd	Explain Basic Terminology of String
	4th	Storing Strings
3rd Week	1st	State Character Dattype
	2nd	Discuss String Operations
	3rd	Introduction about Array
	4th	Discuss Linear Array, Representation of Linear Array in Memory
4th Week	1st	Explain Traversing Linear Array
	2nd	Insert and Delete of an Array
	3rd	Multidimensional Array
	4th	Representation of 2D Array in Memory
5th Week	1st	Pointers
	2nd	Explain Sparse Matrix
	3rd	Fundamental Idea about Stack & Queue
	4th	Fundamental Idea about Stack & Queue
6th Week	1st	Explain Array Representation of Stack
	2nd	Explain Arithmetic and Expression
	3rd	Polish Notation and Conversion. (Infix to Postfix and Postfix to Infix
	4th	Polish Notation and Conversion. (Infix to Postfix and Postfix to Infix
7th Week	1st	Discuss Application of Stack, Recursion
	2nd	Discuss Queue, Circular Queue and Priority Queue
	3rd	Introduction about Linked List
	4th	Introduction about Linked List
	1st	Explain Representation of Linked List in Memory

8th Week	2nd	Discuss Traversing a Linked List
	3rd	Searching (Unsorted and Sorted Linked List)
	4th	Searching (Unsorted and Sorted Linked List)
9th Week	1st	Discuss Garbage Collection
	2nd	Explain Insertion into a Linked List
	3rd	Explain Deletion from a Linked List
	4th	Explain Deletion from a Linked List
10th Week	1st	Explain Basic Terminology of Tree
	2nd	Discuss Binary Tree
	3rd	Representation of Binary Tree Traversal
	4th	Representation of Binary Tree Traversal
11th Week	1st	Binary Search Tree
	2nd	Searching
	3rd	Explain Insertion in a Binary Search tree
	4th	Explain Deletion in a Binary Search tree
12th Week	1st	Explain Graph Terminology and its Representation
	2nd	Explain Graph Terminology and its Representation
	3rd	Adjacency Matrix
	4th	Adjacency Matrix
13th Week	1st	Path Matrix
	2nd	Path Matrix
	3rd	Discuss Algorithms for Bubble Sort
	4th	Discuss Algorithms for Bubble Sort
14th Week	1st	Discuss Algorithms of Quick Sort
	2nd	Discuss Algorithms of Quick Sort
	3rd	Merging , Linear Serching
	4th	Binary Serching
15th Week	1st	Discuss Different Types of File Organization and their Access Method
	2nd	Introduction to Hashing, Hash Function
	3rd	Collision Resolution, Open Addressing
	4th	Question Answer Discussion of Previous Year

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Academic Lesson Plan of Winter 2023

Department : CSE & ETC	Semester : 3RD	Name of the Teaching Faculty : SUBHAKANTA PRADHAN
Subject : DIGITAL ELECTRONICS	No. of Days/per week class allotted : 4Period/week	Semester from : 1ST AUGUST 2023
		No of Weeks : 15 Weeks
		Topic to be covered :
WEEK	**DAY**	**TOPIC**
1st Week	1st	Introduction to Digital Electronics, Number Systems and Codes
	2nd	List Different Number System & their Relevance : Binary, Octal Decimal, Hexadecimal, Study the Conversion from one Number System to another
	3rd	Perform Arithmetic Operations of Binary Number Systems
	4th	1's &2's Complement of Binary Numbers, Perform Substraction of Binary Numbers using Complementary Numbers, Perform Multiplication and Division of Binary Numbers
2nd Week	1st	Define Concept of Digital Code & its Application Distinguish Between Weighted & Non-Weight Code
	2nd	Study Codes : Definition, Relevance Types of Code (8-4-2-1), Gray, Excess-3 and Importance of Party Bit
	3rd	LOGIC GATES : Discuss the basic Logic & Representation using Electric Signals, Learn the Basic Logic Gates (NOT, OR,AND, NOR, NAND, EX-OR & EXNOR) - Symbol, Function, Expression, Truth Table & Example IC Nos, Define Universal Gates with examples & Realization of other gates
	4th	BOOLEAN ALGEBRA : Understand Boolean : Constants, Variables & Functions Comprehend the Laws of Boolean Algebra
3rd Week	1st	State & prove Demorgan's Theorems Represent Logic Expression : SOP & POS Forms & Conversion
	2nd	Simplify the Logic Expression /Functions (Maximum of 4 Variables) Using Boolean Algebra and Karnaugh's Map Methods
	3rd	What is don't care condition ? Realisation of simplified logic expression using K Map
	4th	Realisation of simplified logic expression using Gates Illustrate with examples the above
4th Week	1st	Combinational Circuits
	2nd	Define a Combinational Circuit & Explain with Examples Arithmetic Circuits (Binary)
	3rd	Realise Function, Functional Expression, Logic Circuit, Gate Level Circuit, Truth Table & Applications of Half -adders
	4th	Half-adder & Half-Substractor Explain Serial & Parallel Address concept comparison & Application
	1st	Full-adder & Full-Substractor Explain Serial & Parallel Address concept comparison & Application

5th Week	2nd	Discuss Multiplexers (4:1) : Definition, Relevance, Gate Level Circuit of Simple
	3rd	Discuss De- Multiplexers (1:4) : Logicl Circuit Truth Table
	4th	Explain the Working of Binary-Decimal Encoder & Decoder
6th Week	1st	Explain the Working of Digital Comparator (3 Bit)
	2nd	Explain the working of Seven Segment Decoder
	3rd	Applications of Half-adder & Half-Substractor, Full -adder & Full-Substractor, Multiplexers (4:1), De-multiplexers (1:4)
	4th	Application of Encoder & Decoder, Digital Comparator (3 Bit), Seven Segment Decoder
7th Week	1st	Sequential Logic Circuits
	2nd	Define Sequential Circuit : Explain with Examples
	3rd	Principles of Flip-Flops Operation, Its Types
	4th	Know the Clock Definition Characteristics, Types of Triggering & Wave Form
8th Week	1st	Define Flip-Flop
	2nd	SR Flip-Flop Using NAND,NOR Latch (Un clocked)
	3rd	SR Flip-Flop Using NAND,NOR Latch (Un clocked)
	4th	SR Flip-Flop Using NAND,NOR Latch (Un clocked)
9th Week	1st	Clocked SR,D,JK,T,JK Master Slave Flip-Flops -Symbol, Logic Circuit, Truth Table and Applications
	2nd	Clocked SR,D,JK,T,JK Master Slave Flip-Flops -Symbol, Logic Circuit, Truth Table and Applications
	3rd	Clocked SR,D,JK,T,JK Master Slave Flip-Flops -Symbol, Logic Circuit, Truth Table and Applications
	4th	Concept of Racing and How it can be Avoided
10th Week	1st	Registers, Memories & PLD
	2nd	Shift Registers-Serial in Serial-out, Serial-in Parralel-out, Parallel in Serial -out and Parallel in Parallel out
	3rd	Universal Shift Registers - Applications
	4th	Types of Counter & Applications
11th Week	1st	Binary Counter, Asynchronous Ripple Counter (UP & DOWN), Decade Counter
	2nd	Synchronous Counter, Ring Counter
	3rd	Concept of Memories - RAM, ROM, Static RAM, Dynamic RAM, PS RAM
	4th	Basic Concept of PLD & Applications
12th Week	1st	A/D and D/A Converters
	2nd	Necessity of A/D and D/A Converters
	3rd	D/A Conversion using Weighted Resistors Methods
	4th	D/A Conversion using R-2R Ladder (Weighted Resistors) Network
13th Week	1st	D/A Conversion using R-2R Ladder (Weighted Resistors) Network
	2nd	A/D Conversion using Counter Method
	3rd	A/d Conversion Using Successive Approximate Method
	4th	Logic Families
14th Week	1st	Various Logic families & Categories according to the IC fabrication Process
	2nd	Various Logic families & Categories according to the IC fabrication Process
	3rd	Characteristics of Digital Ics- Propagation Delay, Fan-out, Fan-in
	4th	Characteristics of Digital Ics- Power Dissipation, Noise Margin

15th Week	1st	Power Supply Requirement & Speed with Reference to logoc Families
	2nd	Features of TTL (NAND), CMOS (NAND & NOR)
	3rd	Circuit Operation of TTL (NAND), CMOS (NAND & NOR)
	4th	Applications of TTL (NAND), CMOS (NAND & NOR)

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Academic Lesson Plan of Winter 2024

Department : CSE	Semester : 3RD	Name of the Teaching Faculty : JITENDRA PRASAD DASH
Subject : OBJECT ORIENTED METHODOLOGY	No. of Days/per week class allotted : 4Period/week	Semester from : 1ST AUGUST 2023
		No of Weeks : 15 Weeks
		Topic to be covered :

WEEK	DAY	TOPIC
1st Week	1st	Programming Languages
	2nd	OOPS Concept & Terminology
	3rd	Benefits & Applications of OOPS
	4th	Introduction to Java
2nd Week	1st	Execution Model of Java
	2nd	Java Virtual Machine
	3rd	Java Virtual Machine
	4th	First Java Program
3rd Week	1st	Variables & data types
	2nd	Primitive data types & Declaration
	3rd	Numeric & Characters Literals, String Literals
	4th	Array and Non-primitive Data Types
4th Week	1st	Casting & type Casting
	2nd	Widening & Narrowing Convensions
	3rd	Operators & Expressions, Loop Control Statement
	4th	Decission Control Statement
5th Week	1st	Concept & Syntax of Object and Class
	2nd	Declaration of Class
	3rd	Concept, Syntax & Define Methods
	4th	Creation of Objects
6th Week	1st	String Builder & Buffer
	2nd	Instance Data & Class data
	3rd	Constructors
	4th	Access Specifier, Types of Constructor
7th Week	1st	String Builder & Buffer
	2nd	Methods & Messages
	3rd	Parameter Passing
	4th	Comparing & Identifying Object
	1st	Inheritance in Java

8th Week	2nd	Use of Inheritance, Single Inheritance
	3rd	Multiple and Multi Level Inheritance
	4th	Hierarchical & Hybrid Inheritance
9th Week	1st	Introduction of Polymorphism
	2nd	Method Overloading
	3rd	Run Time Polymorphism
	4th	Method Overloading
10th Week	1st	Introduction to package
	2nd	Java API Packages
	3rd	Using System Packages
	4th	Naming Convention of Package
11th Week	1st	Creating Packages
	2nd	Acessing Packages
	3rd	Using of Packages
	4th	Adding Class to packages
12th Week	1st	Hiding Classes
	2nd	Use of Static Import
	3rd	Stream, Reading & Writing to Files
	4th	I/P & O/P Stream
13th Week	1st	Manipulating Input Data
	2nd	opening & Closing Streams, Predefined Streams
	3rd	File handling Classes & methods
	4th	Exception Overview & Keywords
14th Week	1st	Catching Exception
	2nd	Using Finally Statements
	3rd	Exception Methods, Declaring Exception
	4th	Defining and Throwing Exception
15th Week	1st	Errors and Runtime Exceptions
	2nd	Doubt Clearing Class
	3rd	Doubt Clearing & Discussion
	4th	Question Answer Discussion of Previous Year

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Academic Lesson Plan of Winter 2023

Department : CSE	Semester : 3RD	Name of the Teaching Faculty : JITENDRA PRASAD DASH
Subject : ENVIRONMENTAL STUDIES	No. of Days/per week class allotted : 4Period/week	Semester from : 1ST AUGUST 2023
		No of Weeks : 15 Weeks
		Topic to be covered :
WEEK	DAY	TOPIC
1st Week	1st	Multi Discillinary nature of Environment Studies
	2nd	Definition of Environment
	3rd	Scope and Importance of Environment
	4th	Need for Public Awareness
2nd Week	1st	Natural Resources and Types of natural Resources and Associated Problems
	2nd	Forest Resources, Use and over Explotation Deforestation
	3rd	Case Studies, Timber Extraction, Mining, Dams and their effects on Forests and Tribal People
	4th	Water Resources, use and over utilization of Surface & ground Water, Floods, Drought, Conflicts over Water, Dams Benefits & Problems
3rd Week	1st	Mineral Resources : Use and Explotation , Environmental Effects of Extracting & Using Mineral Resources
	2nd	Food Resources, World Food Problems, Changes caused by Agriculture and over Grazing
	3rd	Effect of Morden Agriculture, Fertilizers Pesticides problems, Water Lagging
	4th	Salinity Energy Resources : Growing Energy Need, Renewable & Non Renewable Energy Sources
4th Week	1st	Use of Alternative Energy Sources, Case Studies, Land Resources and Land Degradation
	2nd	Man Induces Landslides, Soil Erosion and Desertification , Role of Individual in Conservation of Natural Resources
	3rd	Equitable use of Resources for Sustainable Life Style
	4th	Concept of an Ecosystem, Structure and Function of an Ecosystem
5th Week	1st	Producers, Consumer, Decomposer energy flow in the Eco-System
	2nd	Ecologycal Succession, Food Chain, Food Wave and Ecological Pyramids
	3rd	Eco-system Type, Characteristics, Feature, Structure
	4th	Forest Ecosystem, Aquatic Eco-system (Ponds, Stream, Lake, River, Oceans)
	1st	Introduction of Biodiversity and Defination
	2nd	Genetics, Species, and Eco-system

6th Week	3rd	Biogeographically Classification of India Values of Bio-diversity Consumptive use
	4th	Productive use/Social Ethical Assthetic and option Values
7th Week	1st	Biodiversity of Global, Nation and Local Lable
	2nd	Habitat Loss, Pouching of Wild Life, Man, Wild Life Conflicts
	3rd	Environment Pollution, Definition effects and Control of Air Pollution
	4th	Water Pollution
8th Week	1st	Soil Pollution
	2nd	Marine Pollution
	3rd	Noise Pollution
	4th	Thermal Pollution
9th Week	1st	Nuclear Hazards
	2nd	Solid Waste Management & Causes
	3rd	Effects & Control Measures of Urban and Industrial Waste
	4th	Role of an Individual in Prevention of Pollution
10th Week	1st	Disaster Management, Floods, Earthquake
	2nd	Cyclone & Land Slides
	3rd	Form Unsustanable to Sustanable
	4th	Urbaan Problem Related to Energy
11th Week	1st	Water Conservation, Rain water Harvesting
	2nd	Water Shed Management
	3rd	Resettlement & Rehavitation of People, Its problem and Concerns
	4th	Environmental Ethics, Issues and Possible Solution
12th Week	1st	Climate change, Global Warming, Acid Rain, Ozone Layer Depletion
	2nd	Nuclear Accidents and Holo Caust Causes Studies
	3rd	Air (Prevention and Control of Pollution)
	4th	Water (Prevention and Control of Pollution)
13th Week	1st	Public Awareness
	2nd	Population Growth & Variation among Nations
	3rd	Population Growth & Variation among Nations
	4th	Population Explosion and family Welfare
14th Week	1st	Environment & human Health
	2nd	Environment & human Health
	3rd	Human Rights

	4th	Value Education
15th Week	1st	Role of Information Technology
	2nd	Role of Information Technology
	3rd	Doubt Clear
	4th	Question Answer Discussion of Previous Year

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