

LESSON PLAN

- 1) Subject Code: Th-1
- 2) Subject Title: Computer System Architecture
- 3) Semester: 3rd
- 4) Branch: Computer Science & Engg.
- 5) Faculty: Preeti Manjari Barik & Nadeep Jena
- 6) No. of Classes / Week: 4P/week
- 7) Pre Requisite for the Subject: NIL / YES, NIL
- 8) Text Book to be referred by students:

Sl No.	Book	Author	Publication	% of Questions Asked	Year (Edition)	Whether available in Library
i	Fundamentals of Computer Architecture	Parthasarthy, Senthil Kumar	TMH	90	2006	yes

9) Course Coverage Schedule:

Ch. No.	Name of Chapter	Course to be Covered	No of periods Required	Total Class for Chapter/ Week (From-To)	Remarks
1.	Basic structure of computer hardware	1.1 Basic Structure of computer hardware	1	6 Week(1-2)	
		1.2 Functional Units	1		
		1.3 Computer components	1		
		1.4 Performance measures	1		
		1.5 Memory addressing & Operations	2		
2.	Instructions & instruction Sequencing	2.1 Fundamentals to instructions	1	6 Week(2,3)	
		2.2 Operands	1		
		2.3 Op Codes	1		
		2.4 Instruction formats	1		
		2.5 Addressing Modes	2		
3.	Processor System	3.1 Register Files	1	5 Week (4-5)	
		3.2 Complete instruction execution	2		
		- Fetch - Decode - Execution			
		3.3 Hardware control	1		
4.	Memory System	3.4 Micro program control	1	8 Week (5,6,7)	
		4.1 Memory characteristics.	1		
		4.2 Memory hierarchy	1		
		4.3 RAM and ROM organization	1		
		4.4 Interleaved Memory	1		
		4.5 Cache memory	2		
		4.6 Virtual memory	2		

Ch. No.	Name of Chapter	Course to be Covered	No of periods Required	Total Class for Chapter/ Week (From-To)	Remarks
5.	Input – Output System	5.1 Input - Output Interface	1	5 Week(7-8)	
		5.2 Modes of Data transfer	1		
		5.3 Programmed I/O Transfer	1		
		5.4 Interrupt driven I/O	1		
		5.5 DMA	1		
		5.6 I/O Processor	2		
6.	I/O Interface & Bus architecture	6.1 Bus and System Bus	1	6 Week(8,9)	
		6.2 Types of System Bus • Data • Address • Contro	2		
		6.3 Bus Structure	1		
		6.4 Basic Parameters of Bus design	2		
		6.5 SCSI	1		
		6.6 USB	1		
		7	Parallel Processing		
7.2 Linear Pipeline	1				
7.3 Multiprocessor	1				
7.4 Flynn"s Classification	1				

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LESSON PLAN

- 1) Subject Code: Th-2
- 2) Subject Title: DATA STRUCTURE
- 3) Semester: 3rd
- 4) Branch: Computer Science Engg.
- 5) Faculty: Monalisa Batu
- 6) No. of Classes / Week: 4P/week
- 7) Pre Requisite for the Subject: NIL / YES, If YES, give details:
- 8) Text Book to be referred by students:

Sl No.	Book	Author	Publication	% of Questions Asked	Year (Edition)	Whether available in Library
i	Data Structure	S. Lipschutz	Schaum Series	90		yes

8) Course Coverage Schedule:

Ch. No.	Name of Chapter	Course to be Covered	No of periods Required	Total Class for Chapter/ Week (From-To)	Remarks
1.	INTRODUCTION	1.1 Explain Data, Information, data types	1	4 Week(1)	
		1.2 Define data structure & Explain different operations			
		1.3 Explain Abstract data types	1		
		1.4 Discuss Algorithm & its complexity	1		
		1.5 Explain Time, space tradeoff	1		
2.	STRING PROCESSING	2.1 Explain Basic Terminology, Storing Strings	1	3 Week(2)	
		2.2 State Character Data Type	1		
		2.3 Discuss String Operations	1		
3.	ARRAYS	3.1 Give Introduction about array	1	5 Week (2-3)	
		3.2 Discuss Linear arrays, representation of linear array In memory	1		
		3.3 Explain traversing linear arrays, inserting & deleting elements	1		
		3.4 Discuss multidimensional arrays, representation of two dimensional arrays in memory (row major order & column major order), and pointers	1		
		3.5 Explain sparse matrices.	1		
4.	STACKS & QUEUES	4.1 Give fundamental idea about Stacks and queues	1	6	

Ch. No.	Name of Chapter	Course to be Covered	No of periods Required	Total Class for Chapter/ Week (From-To)	Re
		4.2 Explain array representation of Stack	1	Week(4-5)	
		4.3 Explain arithmetic expression ,polish notation & Conversion	1		
		4.4 Discuss application of stack, recursion	2		
		4.5 Discuss queues, circular queue, priority queues.	1		
5.	LINKED LIST	5.1 Give Introduction about linked list	1	5 Week(5-6)	
		5.2 Explain representation of linked list in memory			
		5.3 Discuss traversing a linked list, searching	1		
		5.4 Discuss garbage collection.	2		
		5.5 Explain Insertion into a linked list, Deletion from a linked list, header linked list	1		
6.	TREE	6.1 Explain Basic terminology of Tree	1	5 Week(6-7)	
		6.2 Discuss Binary tree, its representation and traversal, binary search tree, searching	2		
		6.3 Explain insertion & deletion in a binary search trees	2		
7.	GRAPHS	7.1 Explain graph terminology & its representation,	1	3 Week(8)	
		7.2 Explain Adjacency Matrix, Path Matrix	2		
8.	SORTING SEARCHING & MERGING	8.1 Discuss Algorithms for Bubble sort, Quick sort	2	5 Week(8-9)	
		8.2 Merging	1		
		8.3 Linear searching, Binary searching.	2		
9.	FILE ORGANIZATION	9.1 Discuss Different types of files organization and their access method,	2	4 Week(10)	
		9.2 Introduction to Hashing, Hash function, collision resolution, open addressing.	2		

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LESSON PLAN

- 1) Subject Code: Th-3
- 2) Subject Title: DIGITAL ELECTRONICS
- 3) Semester: 3rd
- 4) Branch: Computer Science & Engg.
- 5) Faculty: Sibanika Panda
- 6) No. of Classes / Week: 3P/week
- 7) Pre Requisite for the Subject: NIL / YES, If YES, give details:
- 8) Text Book to be referred by students:

Sl No.	Book	Author	Publication	% of Questions Asked	Year (Edition)	Whether available in Library
i	Fundamentals of digital circuits	A. Anand Kumar	PHI	90%	2010	YES

9) Course Coverage Schedule:

Ch. No.	Name of Chapter	Course to be Covered	No of periods Required	Total Class for Chapter/ Week (From-To)	Remarks
1.	Basics of Digital Electronics	1.1 Number System-Binary, Octal, Decimal, Hexadecimal - Conversion from one system to another number system.	2	8 Week(1,2-3)	
		1.2 Arithmetic Operation-Addition, Subtraction, Multiplication, Division, 1's & 2's complement of Binary numbers & Subtraction using complements method	2		
		1.3 Digital Code & its application & distinguish between weighted & non-weight Code, Binary codes, excess-3 and Gray codes.			
		1.4 Logic gates: AND, OR, NOT, NAND, NOR, Exclusive-OR, Exclusive-NOR--Symbol, Function, expression, truth table & timing diagram	1		
		1.5 Universal Gates & its Realisation			
		1.6 Boolean algebra, Boolean expressions, Demorgan's Theorems.	1		
2.	Combinational Logic Circuits	1.7 Represent Logic Expression: SOP & POS forms		6 Week (3,4-5)	
		1.8 Karnaugh map (3 & 4 Variables) & Minimization of logical expressions, don't care conditions	2		
		2.1 Half adder, Full adder, Half Subtractor, Full Subtractor, Serial and Parallel Binary 4 bit adder.	2		

Ch. No.	Name of Chapter	Course to be Covered	No of periods Required	Total Class for Chapter/ Week (From-To)	Rem.
		2.2 Multiplexer (4:1), De-multiplexer (1:4), Decoder, Encoder, Digital comparator (3 Bit)	2		
		2.3 Seven segment Decoder (Definition, relevance, gate level of circuit Logic circuit, truth table, Applications of above)	2		
3.	Sequential logic Circuits	3.1 Principle of flip-flops operation, its Types, 3.2 SR Flip Flop using NAND,NOR Latch (un clocked)	1	4 Week (5-6)	
		3.3 Clocked SR,D,JK,T,JK Master Slave flip-flops-Symbol, logic Circuit, truth table and applications	2		
		3.4 Concept of Racing and how it can be avoided.	1		
4.	Registers, Memories & PLD	4.1 Shift Registers-Serial in Serial -out, Serial- in Parallel-out, Parallel in serial out and Parallel in parallel out	1	5 Week(7-8)	
		4.2 Universal shift registers-Applications.	1		
		4.3 Types of Counter & applications	1		
		4.4 Binary counter, Asynchronous ripple counter (UP & DOWN), Decade counter. Synchronous counter, Ring Counter.	1		
		4.5 Concept of memories-RAM, ROM, static RAM, dynamic RAM,PS RAM	2	3 Week(8,9)	
5.	A/D and D/A Converters	4.6 Basic concept of PLD & applications			
		5.1 Necessity of A/D and D/A converters.	1		
		5.2 D/A conversion using weighted resistors methods.		2	
		5.3 D/A conversion using R-2R ladder (Weighted resistors) network.			
		5.4 A/D conversion using counter method.			
		5.5 A/D conversion using Successive approximate method		4 Week(9-10)	
6.	LOGIC FAMILIES	6.1 Various logic families &categories according to the IC fabrication process	1		
		6.2 Characteristics of Digital ICs- Propagation Delay, fan-out, fan-in, Power Dissipation ,Noise Margin ,Power Supply requirement &Speed with Reference to logic families.	2		
		6.3 Features, circuit operation &various applications of TTL(NAND), CMOS (NAND & NOR)	1		

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LESSON PLAN

- 1) Subject Code: Th-4
- 2) Subject Title: OOMS
- 3) Semester: 3rd
- 4) Branch: Computer Science Engg.
- 5) Faculty: Biswajit Barik
- 6) No. of Classes / Week: 4P/week
- 7) Pre Requisite for the Subject: NIL / YES, If YES, give details:
- 8) Text Book to be referred by students:

SI No.	Book	Author	Publication	% of Questions Asked	Year (Edition)	Whether available in Library
i	Object Oriented Methodology	E. Balagurusami	The McGraw-Hill Companies	90		yes

9) Course Coverage Schedule:

Ch. No.	Name of Chapter	Course to be Covered	No of periods Required	Total Class for Chapter/ Week (From-To)	Remarks
1.	PRINCIPLES OF OBJECT ORIENTED PROGRAMMING	1.1 Programming Languages	1	3 Week(1)	
		1.2 Object Oriented Programming			
		1.3 OOPS concepts and terminology	1		
		1.4 Benefit of OOPS 1.5 Application of OOPS	1		
2.	INTRODUCTION TO JAVA	2.1 What is Java ?	1	8 Week(1-3)	
		2.2 Execution Model of Java			
		2.3 The Java Virtual Machine	1		
		2.4 A First Java Program			
		2.5 Variables and Data types	1		
		2.6 Primitive Data types & Declarations			
		2.7 Numeric and Character Literals 2.8 String Literals	1		
		2.9 Arrays, Non-Primitive Data types	1		
		2.10 Casting and Type Casting			
		2.11 Widening and Narrowing Conversions	1		
		2.12 Operators and Expressions	1		
		2.13 Control Flow Statements	1		
3.	OBJECTS AND CLASSES	3.1 Concept and Syntax of class	1	5 Week(3-4)	
		3.2 Defining a Class			
		3.3 Concept and Syntax of Methods	1		
		3.4 Defining Methods			
		3.5 Creating an Object	1		
		3.6 Accessing Class Members			
		3.8 Constructors	1		
		3.9 Access specifiers			

Ch. No.	Name of Chapter	Course to be Covered	No of periods Required	Total Class for Chapter/ Week (From-To)	Rema
		3.10 Access Modifiers 3.11 Access Control	1		
4.	USING JAVA OBJECTS	4.1 String Builder and String Buffer 4.2 Methods and Messages 4.3 Parameter Passing 4.4 Comparing and Identifying Objects	1 1 1 1	4 Week(5)	
5.	INHERITANCE	5.1 Inheritance in Java 5.2 Use of Inheritance 5.3 Types of Inheritance 5.4 Single Inheritance 5.5 Multi-level Inheritance 5.6 Hierarchical Inheritance 5.7 Hybrid Inheritance	1 1 1	3 Week(6)	
6.	POLYMORPHISM	6.1 Types of Polymorphism 6.2 Method Overloading 6.3 Run time Polymorphism 6.4 Method Overriding	1 1	2 Week(6)	
7.	PACKAGES: PUTTING CLASSES TOGETHER	7.1 Introduction 7.2 Java API Packages 7.3 Using System Packages 7.4 Naming Convention 7.6 Accessing a Package 7.5 Creating Packages 7.7 Using a Package 7.8 Adding a Class to Package 7.9 Hiding Classes 7.10 Static Import	1 1 1 1 1 1 1 1	6 Week(6-8)	
8.	JAVA FILES AND I/O	8.1 What is a stream? 8.2 Reading and writing to files(only txt files) 8.3 Input and Output Stream 8.4 Manipulating Input data 8.5 Opening and Closing Streams 8.6 Predefined streams 8.7 File handling Classes and Methods	1 1 1 1 1	5 Week(8-9)	
9.	EXCEPTION HANDLING	9.1 Exceptions Overview 9.2 Exception Keywords 9.3 Catching Exceptions 9.4 Using Finally Statement 9.5 Exception Methods 9.6 Declaring Exceptions 9.7 Defining and throwing exceptions 9.8 Errors and Runtime Exceptions 9.7 Declaring Exceptions 9.8 Errors and Runtime Exceptions	1 1 1 1	4 Week(10)	

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LESSON PLAN

- 1) Subject Code: TH 5
- 2) Subject Title: ENVIRONMENTAL STUDIES
- 3) Semester: 3rd
- 4) Branch: Civil/Comp.Sc/Elect./Mech. Engg.
- 5) No. of Classes / Week: 3P/Week
- 6) Faculty: Aparajita Mohapatra & Amrita Mallick
- 7) After completion of study of environmental studies, the student will be able to:

1. Gather adequate knowledge of different pollutants, their sources and shall be aware of solid waste management systems and hazardous waste and their effects.
2. Develop awareness towards preservation of environment.

8) Text Book to be referred by students:

Sl No.	Book	Author	Publication	% of Questions Asked	Year (Edition)	Whether available in Library
i	Fundamental concepts in Environmental Studies	D.D. Mishra	S.Chand & Co-Ltd	90%	2009 1st	YES

9) Course Coverage Schedule:

Ch. No.	Name of Chapter	Course to be Covered	No of periods Required	Total Class for Chapter/ Week (From-To)	Remarks
01	The Multidisciplinary nature of environmental studies	1.1 Definition, scope and importance, Need for public awareness.	1	2 Week(1)	
		1001 Topic End	1		
02	Natural Resources	2.1 Renewable and non renewable resources: a) Natural resources and associated problems.	1	8 Week(1-4)	
		Forest resources: Use and over-exploitation, deforestation, case studies, Timber extraction mining, dams and their effects on forests and tribal people			
		Water resources:- Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dam's benefits and problems.	1		
		Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources.	1		
		Food Resources: World food problems, changes caused by agriculture and over grazing, effects of modern agriculture,	1		

		fertilizers- pesticides problems, water logging, salinity,.			
		Energy Resources: Growing energy need, renewable and nonrenewable energy sources, use of alternate energy sources, case studies	1		
		Land Resources:- Land as a resource, land degradation, man induces landslides, soil erosion, anddesertification.	1		
		2.2Role of individual in conservation of natural resources.	1		
		2.3Equitable use of resources for sustainable life styles. Equitable use of resources for sustainable life styles.	1		
		1002 Topic End			
03	Systems	3.1 Concept of an eco system.	1	5 Week(4-5)	
		3.2 Structure and function of an eco system.			
		3.3 Producers, consumers,decomposers.	1		
		3.4 Energy flow in the eco systems.			
		3.5 Ecological succession.	1		
		3.6 Food chains, food webs and ecological pyramids	1		
		3.7 Introduction, types, characteristic features, structure and function of the following eco system: - Forest ecosystem: - Aquatic eco systems (ponds, streams, lakes,rivers, oceans, estuaries)	1		
		1003 Topic End			
04	Biodiversity and it's Conservation	4.1 Introduction-Definition: genetics, species and ecosystem diversity.	1	3 Week(6)	
		4.2 Biogeographically classification of India.			
		4.3 Value of biodiversity: consumptive use, productive use, social ethical, aesthetic and optinvalues.	1		
		4.4 Biodiversity at global, national and local level.			
		4.5 Threats to biodiversity: Habitats loss, poaching of wild life, man wildlife conflicts.	1		
		1004 Topic End			
05	Environmental Pollution.	5.1Definition Causes, effects and control measures of: a) Air pollution. b) Water pollution. c) Soil pollution d) Marine pollution e) Noise pollution. f) Thermal pollution	1	3 Week(7)	

		g) Nuclear hazards.			
		5.2 Solid waste Management: Causes, effects and control measures of urban and industrial wastes.	1		
		5.3 Role of an individual in prevention of pollution. Disaster management: Floods, earth quake, cyclone and landslides.	1		
		1005 Topic End			
06	Social issues and the Environment	6.1 Form unsustainable to sustainable development.	1	5 Week(8-9)	
		6.2 Urban problems related to energy.			
		6.3 Water conservation, rain water harvesting, water shed management.	1		
		6.4 Resettlement and rehabilitation of people; its problems and concern	1		
		6.5 Environmental ethics: issue and possible solutions.			
		6.6 Climatechange, globalwarming,acidrain,ozonelayer depletion, nuclear accidents and holocaust, case studies.	1		
		6.7 Air (prevention and control of pollution) Act.			
		6.8 Water (prevention and control of pollution) Act.	1		
		6.9 Public awareness.			
		1006 Topic End			
07	Human population and the environment	7.1 Population growth and variation among nations	1	4 Week (9-10)	
		7.2 Population explosion- family welfare program.	1		
		7.3 Environment and humanhealth.	1		
		7.4 Human rights.			
		7.5 Value education			
		7.6 Role of information technology in environment and human health.	1		
		1007 Topic End			

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