

DEPARTMENT OF COMPUTER ENGINEERING
SIRDA POLYTECHNIC SUNDERNAGAR
DISTT.- MANDI (H.P.) - 175019

LESSON PLAN

Program Name	Computer Engineering
Subject Name	Wireless Communication
Subject Code	COPE204-II
Semester	4th
Subject Teacher Name	Er. Shiwanshu

Evaluation Scheme

S. No.	Subject Name	Study Scheme (Hrs/week)		Marks Distribution in Evaluation Scheme					
				Internal Assessment			External Assessment		
				Th	Pr	Total	Th	Pr	Total
1	Wireless Communication	3	0	40	0	40	60	0	100

Teaching Plan

	Name of Topic	Proposed Date	Actual Date	Remarks
Unit-I Introduction to Wireless Communication	Wireless communication and its applications	28.01.2026		
	Wireless communication and its applications	30.01.2026		
	Advantages and Disadvantages of wireless communication	31.01.2026		
	Types of Services broadcast, paging, cellular telephony, trunking radio, cordless telephony	04.02.2026		
	Types of Services broadcast, paging, cellular telephony, trunking radio, cordless telephony	06.02.2026		
	trunking radio, cordless telephony WLAN, PAN	07.02.2026		
	ad hoc & sensor networks	11.02.2026		
	fixed wireless access	13.02.2026		
	challenges in wireless communication	18.02.2026		
Revision	20.02.2026			
Unit-II Electromagnetic Spectrum	Electromagnetic spectrum, licensed/unlicensed spectrum bands,	21.02.2026		
	Electromagnetic spectrum, licensed/unlicensed spectrum bands,	25.02.2026		
	ISM band, terrestrial and satellite microwave communication	27.02.2026		
	broadcast radio, infrared and light wave communication,	28.02.2026		
	wireless transmission impairments	06.03.2026		
	attenuation, distortion, noise, interference, path loss,	07.03.2026		
	shadowing and fading	11.03.2026		
	CT-1	13.03.2026		

Unit-III Fundamentals of Wireless Communication	Concept of bandwidth, analog and digital signals,	20.03.2026		
	Concept of bandwidth, analog and digital signals,	25.03.2026		
	data rate, signal strength, SNR, RSSI,	27.03.2026		
	electromagnetic wave propagation: ground waves, sky waves and line-of-sight propagation;	28.03.2026		
	radiowaves, microwaves, infrared;	01.04.2026		
	Overview of Propagation Mechanisms: reflection, diffraction and scattering	04.04.2026		
	Overview of Propagation Mechanisms: reflection, diffraction and scattering	08.04.2026		
	outdoor and indoor propagation.	10.04.2026		
	Revision	10.04.2026		
Unit-IV Cellular Architecture	Cellular Communication: cellular concept, cellular system architecture	15.04.2026		
	cells, clusters, frequency reuse, cell splitting, handoff,	17.04.2026		
	Digital Cellular System: TDMA, ETDM, PCS, CDMA,	18.04.2026		
	Digital Cellular System: TDMA, ETDM, PCS, CDMA,	22.04.2026		
	Global System for Mobile Communication (GSM)	24.04.2026		
	GSM network: switching system, BSS, operation and support system	25.04.2026		
	CT-2	29.04.2026		
	Generations of cellular networks and their features (1G – 5G).	08.05.2026		
Unit-V Wireless LAN Technology and Bluetooth	Wireless LAN (WLAN), IEEE-802.11,	13.05.2026		
	WLAN applications, WLAN types,	15.05.2026		
	WLAN problems – hidden station and exposed station problems	16.05.2026		
	Bluetooth technology,	22.05.2026		
	Direct Sequence Spread Spectrum Scheme,	23.05.2026		
	Frequency Hopping Spread Spectrum, PAN	23.05.2026		

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Raman Sharma
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P. O. Kanold
Principal

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LESSON PLAN

Program Name	Computer Engineering
Subject Name	Information Security
Subject Code	ITPE202-I
Semester	4th
Subject Teacher Name	Er.Abhishek

Evaluation Scheme

S. No.	Subject Name	Study Scheme (Hrs/week)		Marks Distribution in Evaluation Scheme					
				Internal Assessment			External Assessment		
		Th	Pr	Th	Pr	Total	Th	Pr	Total
1	Information Security	4	0	40	0	40	60	0	100

Reference Books	(1) Information Security: The Complete Reference By Mark Rhodes, McGraw-Hill (2) Cryptography and Network Security : Principles and Practice by William Stallings, Pearson Education
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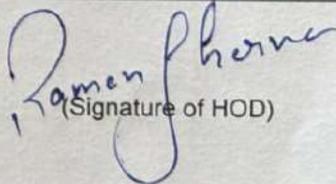
Teaching Plan

	Name of Topic	Proposed Date	Actual Date	Remarks
Unit-I Introduction	Introduction	27.01.2026		
	Information Security, Cybersecurity	28.01.2026		
	Need for Cybersecurity, Aspects of Information Security	29.01.2026		
	Malware - Worm, Virus, Trojan Horse, Bots & Botnets	31.01.2026		
	Ransomware, Spyware, Keylogger, Spamming and Phishing;	03.02.2026		
	Security Features of Operating Systems - Authentication,	04.02.2026		
	File System Protection	05.02.2026		
	User Privileges, RAID Options	07.02.2026		
	Anti-Virus Software,	10.02.2026		
	OS Security Patches	11.02.2026		
	Introduction	12.02.2026		
	Cryptography,	17.02.2026		
	Symmetric Ciphers	18.02.2026		
	Asymmetric Ciphers	19.02.2026		
	Substitution Cipher	21.02.2026		

Unit-II Basics of Cryptography	Caesar Cipher,	24.02.2026		
	Transposition Technique	25.02.2026		
	Steganography	26.02.2026		
	Stream and Block Ciphers (Introduction Only	28.02.2026		
	Public Key Cryptography	03.03.2026		
	Public Key Cryptography	05.03.2026		
	Class Test - I	12.03.2026		
Unit-III Cybersecurity Framework	Introduction	07.03.2026		
	NIST Definition of Computer Security	10.03.2026		
	CIA Triad	11.03.2026		
	NIST Framework for Cybersecurity,	17.03.2026		
	Cybersecurity Framework Components	18.03.2026		
	Framework Core - Functions	19.03.2026		
	Categories	24.03.2026		
	Subcategories	25.03.2026		
	Framework Implementation Tier	28.03.2026		
	Framework Implementation Tier	31.03.2026		
Unit-IV Information Security Architecture	OSI Security Architecture	01.04.2026		
	Definitions of Security Attack,	02.04.2026		
	Security Mechanism, Security Service,	04.04.2026		
	Class Test - II	09.04.2026		
	Threat and Attack; Active and Passive Attacks,	07.04.2026		
	Security Services - Authentication, Access Control,	07.04.2026		
	Data Confidentiality, Data Integrity and Non-repudiation;	08.04.2026		
	Security Mechanisms - Encipherment,	16.04.2026		
	Digital Signature	18.04.2026		
	Access Control, Data Integrity,	18.04.2026		
	Authentication Exchange,	21.04.2026		
	Traffic Padding,	22.04.2026		
	Routing Control and Notarization	23.04.2026		

Unit-V : Network and Internet Security	Network Classification : Trusted, Semi-trusted, Untrusted & Unknown Networks;	25.04.2026		
	Network Attacks Classification : Interruption, Interception	28.04.2026		
	Modification & Fabrication;	29.04.2026		
	Network Attacks : Password Stealing, Packet Sniffers, IP Spoofing	30.04.2026		
	Denial-of-Service (DoS), Man-in-Middle, Session Hijacking;	02.05.2026		
	Security Weaknesses in Networks, Network Access Control, IEEE 802.1x,	05.05.2026		
	VLAN, Firewall, Extensible Authentication Protocol,	06.05.2026		
	Network Security Protocols - TLS, SSL, HTTPS, IPsec and SSH,	07.05.2026		
	Ingress Filtering, VPN, Firewalls, Internet Security Threats : Privacy Breach,	12.05.2026		
	DNS Spoofing, Email Spam, Cross-site Scripting (XSS);	13.05.2026		
	Web Browser Security Settings : Cookies,	14.05.2026		
	Website Certificate, Browsing History,	16.05.2026		
	Plugins, Parental Control,	19.05.2026		
	Form Autofill, CAPTCHA; Strong Passwords	20.05.2026		
Unit-VI : Cyber Laws	Cyber Crime,	21.05.2026		
	Cyber Crime against Person,	21.05.2026		
	Property and Government,	21.05.2026		
	Major Provisions under Indian IT Act-2000 (Sections 65, 66, 67, 69)	23.05.2026		
	Intellectual Property Rights,	23.05.2026		
	Patent Law,	23.05.2026		
	Copyright Law,	26.05.2026		
	Digital Signatures	26.05.2026		


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DEPARTMENT OF COMPUTER ENGINEERING
SIRDA POLYTECHNIC SUNDERNAGAR
DISTT.- MANDI (H.P.) - 175019

LESSON PLAN

Program Name	Computer Engineering
Subject Name	Data Structure & Algorithms
Subject Code	(COPC204)
Semester	4th
Subject Teacher Name	Er. Rekha

Evaluation Scheme

S. No.	Subject Name	Study Scheme (Hrs/week)		Marks Distribution in Evaluation Scheme					
				Internal Assessment			External Assessment		
		Th	Pr	Th	Pr	Total	Th	Pr	Total
1	Data Structure & Algorithms	4	4	40	0	40	60	0	100
2	Data Structure & Algorithms	0	4	0	40	40	0	60	100

Reference Books	(1) Fundamentals of Data Structure in C, Data Structure using C udit Agrwal
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Teaching Plan	
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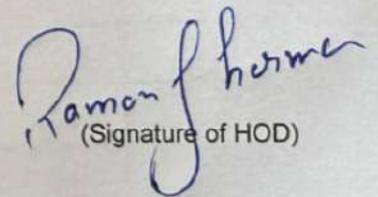
	Name of Topic	Proposed Date	Actual Date	Remarks
Unit-I Introduction	Introduction:	28/1/2026		
	Algorithms-Definition,	30/1/2026		
	Characteristics, Efficiency	31/1/2026		
	Notations - Asymptotic, Big-Oh,	2/2/2026		
	Notations - Asymptotic, Big-Oh,	4/2/2026		
	Omega, Theta notation;	6/2/2026		
	Data Types,	7/2/2026		
	Data Types,	9/2/2026		
	Data Structures - Characteristics,	11/2/2026		
	Types - Linear, Non-linear	13/2/2026		
	General Operations, Efficiency	16/2/2026		
	Revison	18/2/2026		

Unit-II Arrays, Structures and Pointers	Arrays, Structures and Pointers	20/2/2026		
	Arrays, One-Dimensional and	21/2/2026		
	Multi-Dimensional Arrays	23/2/2026		
	Two-Dimensional Arrays–Memory Representation,	25/2/2026		
	Implement Matrices using Two-Dimensional Arrays,	27/2/2026		
	Implement Matrices using Two-Dimensional Arrays,	28/2/2026		
	Two-Dimensional Arrays–Memory Representation,	2/3/2026		
	Matrix Operations-Addition,	6/3/2026		
	Matrix Operations- Subtraction,	6/3/2026		
	Multiplication, Transpose;	6/3/2026		
	Structure-Accessing structure members using (.)	7/3/2026		
	and (->) operators, selfreferencing structures,	7/3/2026		
	Pointers-Dynamic Memory Allocation using malloc(),	7/3/2026		
	CT-1	9/3/2026		
	calloc(),free() and realloc(),	11/3/2026		
	Manipulate Arrays using Pointers.	13/3/2026		
	Revise	16/3/2026		
Revise	18/3/2026			
Unit-III Sorting and Searching	Sorting and Searching	20/3/2026		
	Searching Techniques - Linear Search,	21/2026		
	Linear Search;	23/3/2026		
	Binary Search;	25/3/2026		
	Sorting Techniques – Selection Sort,	27/3/2026		
	Insertion Sort,	28/3/2026		
	Bubble Sort,	30/3/2026		
	Quick Sort,	1/4/2026		
	CT-2	4/4/2026		
	Merge Sort;	6/4/2026		
	Efficiencies of Sorting Algorithms.	8/4/2026		

Unit-IV Linear Data Structures	Linear Data Structures	10/4/2026		
	Linked Lists - Representation, Advantages, Disadvantages,	13/4/2026		
	Linked Lists - Representation, Advantages, Disadvantages,	17/4/2026		
	Implementation, Operations; Doubly Linked List,	18/4/2026		
	Implementation, Operations; Doubly Linked List,	20/4/2026		
	Stacks, Stack Operations - Push, Pop;	22/4/2026		
	Implementation of Stack using Arrays	24/4/2026		
	Implementation of Stack using Linked List	25/4/2026		
	Queues, Queue Operations,	27/4/2026		
	Implementation of Queue using Arrays	29/4/2026		
	Implementation of Queue using linked list	2/5/2026		
Unit-V Non -Linear Data Structures	Trees, Tree Terminology - Node, Root, Parent, Children,	4/5/2026		
	Sibling, Edge, Leaves; Binary Tree,	11/5/2026		
	Binary TreeRepresentation,	13/5/2026		
	Binary Tree Traversal,	15/5/2026		
	Binary Search Tree	16/5/2026		
	Graphs, Graph Terminology,	18/5/2026		
	Directed Graphs,Weighted Graphs,	20/5/2026		
	Graph Implementation using Adjacency Matrix	22/5/2026		
	Graph Implementation using Adjacency Matrix	23/5/2026		
Graph Implementation using Adjacency Adjacency List.	25/5/2026			



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DEPARTMENT OF COMPUTER ENGINEERING
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LESSON PLAN

Program Name	Computer Engineering
Subject Name	Database Management Systems
Subject Code	ITPC204
Semester	4th
Subject Teacher Name	Er. Abhishek

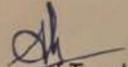
Evaluation Scheme

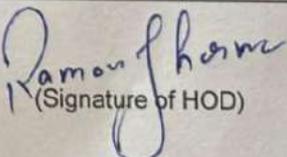
S. No.	Subject Name	Study Scheme (Hrs/week)		Marks Distribution in Evaluation Scheme					
				Internal Assessment			External Assessment		
		Th	Pr	Th	Pr	Total	Th	Pr	Total
1	Database Management Systems	4	0	40	0	40	60	0	100

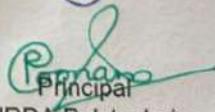
Teaching Plan

	Name of Topic	Proposed Date	Actual Date	Remarks
Unit-I Introduction to Database Systems	Introduction to Database Systems	27.01.2026		
	Database Systems, Database and its Purpose	28.01.2026		
	File-based and Traditional Record Keeping Approaches	31.01.2026		
	Comparison of Database Approach	02.02.2026		
	Advantages and Disadvantages of Database Approach	03.02.2026		
	Classification of Database Users	04.02.2026		
	Role of DBA	07.02.2026		
Unit-II Database System Concepts and Architecture	Data Models, Schemas, and Instances	09.02.2026		
	ANSI/SPARC Architecture of a Database System	10.02.2026		
	External Level	11.02.2026		
	Conceptual Level	16.02.2026		
	Internal Level,	17.02.2026		
	Mappings; Data Independence	18.02.2026		
	Logical Data Independence, Physical Data Independence	21.02.2026		
Unit-III Relational and E-R Models	Relational Database Model	23.02.2026		
	Relations, Attributes Tuples	24.02.2026		
	Prime and Non-prime Attributes	25.02.2026		
	Key – Primary Key, Candidate Keys	28.02.2026		
	Alternate Keys, Superkey	02.03.2026		
	Secondary Key, Foreign Keys	03.03.2026		
	Entity Relationship Model - Entity, Entity Sets, Strong and Weak Entities	07.03.2026		
	class test-1	11.03.2026		
	Attributes, and Keys; Association,	09.03.2026		
	Relationship, Roles, Structural Constraints	10.03.2026		
Unit - 4 Database Dependencies and Normalization	ER Diagrams	10.03.2026		
	Functional Dependencies	16.03.2026		
	Trivial and Non-trivial Dependencies	17.03.2026		
	Non-Loss Decomposition, Normalization,	18.03.2026		
	First, Second and Third Normal Forms	23.03.2026		
Boyce-Codd Normal Form	24.03.2026			

Unit-V Overview of MySQL	class test-2	25.03.2026		
	MySQL, Features of MySQL	28.03.2026		
	Database Objects - Database, Table, View, Index	30.03.2026		
	Alias; MySQL Object Naming, Keywords	31.03.2026		
	User-defined Variables, Data Types - Numeric, Date and Time,	01.04.2026		
	String Types; Operators: Arithmetic, Logical, Relational, String	04.04.2026		
	String Types; Operators: Arithmetic, Logical, Relational, String	06.04.2026		
	MySQL System Schema, MySQL Database Users and Roles,	07.04.2026		
	MySQL System Schema, MySQL Database Users and Roles,	08.04.2026		
	Database Privileges, Access Control and Account Management	13.04.2026		
	MySQL Server and MySQL Client	18.04.2026		
Unit-VI Structure Query Language using MySQL	SQL, DDL Statements : CREATE, DROP, ALTER, RENAME	20.04.2026		
	DML Statements: INSERT, UPDATE , DELETE, SELECT	21.04.2026		
	DML Statements: INSERT, UPDATE , DELETE, SELECT	22.04.2026		
	SELECT Clauses - FROM, WHERE, ORDER BY, GROUP BY,	25.04.2026		
	Join Operations - Inner, Left, Right and Outer Joins	27.04.2026		
	Join Operations - Inner, Left, Right and Outer Joins	28.04.2026		
	Subqueries, Set Operations - Union, Intersect, Minus;	29.04.2026		
	Transaction Statements - COMMIT, ROLLBACK, SAVEPOINT	02.05.2026		
	Prepared Statements, SQL Functions	04.05.2026		
	ABS, ROUND, FLOOR, CEIL, SQRT, POWER, TRUNCATE	05.05.2026		
	ABS, ROUND, FLOOR, CEIL, SQRT, POWER, TRUNCATE	06.05.2026		
	LOG, NOW, DATE, TIME, CURDATE, CURTIME, DAY	11.05.2026		
	LOG, NOW, DATE, TIME, CURDATE, CURTIME, DAY	12.05.2026		
	MONTH, YEAR, DATEDIFF, DATE_SUB, DATE_ADD	13.05.2026		
	DATE_FORMAT, CONCAT, LENGTH, UPPER, LOWER, LEFT, RIGHT,	16.05.2026		
	LTRIM, RTRIM, MAX, MIN, SUM	18.05.2026		
	AVG, COUNT, CAST, STR_TO_DATE	19.05.2026		
	Revision	20.05.2026		
	Revision	23.05.2026		
	Revision	25.05.2026		
	Revision	26.05.2026		


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