Deptartment: Computer Engineering

Subject: Indian Constitution

Lect.No	Topic Number	
	Unit 1 Introduction to Constitution:(8 Hours)	
1	☐ History of making of the Indian Constitution.	
2	☐ Meaning and importance of the Constitution.	
3	☐ Salient features and Preamble of Indian Constitution.	Contd....
4	☐ Salient features and Preamble of Indian Constitution.	
5	☐ Fundamental rights- meaning and limitations.	Contd.....
6	☐ Fundamental rights- meaning and limitations.	
7	☐ Directive principles of state policy and Fundamental duties -their enforcement and their relevance.	Contd....
8	☐ Directive principles of state policy and Fundamental duties -their enforcement and their relevance.	
	Unit 2 Union Government: (8 Hours)	
9	☐ Structure of Union Government.	
10	☐ Structure of Union Government.	
11	☐ Union Executive- President, Vice-president, Prime Minister, Council of Ministers.	Contd...
12	☐ Union Executive- President, Vice-president, Prime Minister, Council of Ministers.	
13	☐ Union Legislature- Parliament and Parliamentary proceedings.	Contd...
14	☐ Union Legislature- Parliament and Parliamentary proceedings.	
15	☐ Union Judiciary-Supreme Court of India – composition and powers and function.	Contd...
16	☐ Union Judiciary-Supreme Court of India – composition and powers and function.	
	Unit 3 State and Local Governments:(10 Hours)	
17	☐ Structure of State Government.	
18	☐ Structure of State Government.	Contd.....
19	☐State Executive- Governor, Chief Minister, Council of Ministers.	
20	☐State Executive- Governor, Chief Minister, Council of Ministers.	
21	☐ State Legislature-State Legislative Assembly and State Legislative Council.	Contd.....
22	☐ State Legislature-State Legislative Assembly and State Legislative Council.	
23	☐ State Judiciary-High court.	Contd.....
24	☐ State Judiciary-High court.	
25	☐ Local Government-Panchayat raj system with special reference to 73rd and Urban Local Self Govt. with special	
	to74th Amendment.	Contd.....
26	☐ Local Government-Panchayat raj system with special reference to 73rd and Urban Local Self Govt. with special	
	to74th Amendment.	
	Unit 4 Election provisions, Emergency provisions, Amendment of the constitution: (6Hours)	
27	☐ Election Commission of India-composition, powers and functions and electoral process.	Contd.....
28	☐ Election Commission of India-composition, powers and functions and electoral process.	
29	☐ Types of emergency-grounds, procedure, duration and effects.	Contd.....
30	☐ Types of emergency-grounds, procedure, duration and effects.	
31	☐ Amendment of the constitution- meaning, procedure and limitations.	Contd.....
32	☐ Amendment of the constitution- meaning, procedure and limitations.	

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Department.: Computer Engineering

Subject: Essence of Indian Knowledge & Tradition

Course Learning Objectives	The objective of this course is to expose the students with the concepts of Indian traditional knowledge and to make them appreciate the importance of the roots of indigenous knowledge system.
Course Outcomes	After completing this course the students will be able to: CO-1. Identify the concept of Indian Knowledge System (IKS). CO-2. Understand the need and importance of protecting traditional knowledge. CO-3. Compare the Indian traditional knowledge and modern science. CO-4. Understand the use of Yoga in stress management, mental health, mindfulness, healthy eating, weight loss and quality sleep. CO-5. Aware of the general knowledge of Himachal Pradesh.
Lect.No	Topic Number
	Unit 1 Indian Knowledge System (IKS):----------15 Marks
1	□ Introduction and Function of Indian Knowledge System(IKS).
	□ The Basic Structure of Indian Knowledge System(IKS) (only Introduction
2	1. The 4 Vedas, Namly ऋ्ेद (Rigveda) ,यजुवॅद (Yajurveda),सामवेद (Samaveda) ,अथवाेवेद (Atharvaveda) .
3	2. The 4 UpVedas, Namelyआयुवॅद (Ayurveda (health-care)), धनुवॅद (Dhanurveda (archery)), गंधवाेवेद (Gandharva-veda (dance, music etc.)) and थापत्यवेद (Sthapatyaveda (architecture)).
4	3. The 6 Vedagangs ,namelyShiksha (ि◌शा◌ा), Kalpa (कब),Vykarana (ि◌ाकरण), Chhandasछं दस्), Nirukta (िनSb), and Jyotisha(Ûो◌ितष).
5	4. Itihasa (इितहास)(Ramayanaरामायण and Mahabharata महाभारत) and Puranaपुराण (Vishnupuranaि◌ष्णुपुराण, BhagavataPurana (भागवतपुराण) etc.)
6	5. Dharmashatraधमाेशा. (Manusmritiमनु"ृ◌ित, Yajnavalkya-smritiयाॅवʌ"ृ◌ित, etc.).
7	6. Darshanदशाेन (आ◌ं◌कतथाना◌ं◌क).
8	7. Nyaya Q◌ाय (Logic तकाेशा.andEpistemologyॅ◌ानमीमांसा).
	Unit 2 : Modern Science ----------12 Marks
9	• Modern science: Introduction, Characteristics, importance and Example----------contd.
10	• Modern science: Introduction, Characteristics, importance and Example
11	• Difference between modern Science and Indian knowledge system
12	• Difference between modern Science and Indian knowledge system
13	• Role of IKS in modern science
14	• Role of IKS in modern science
	Unit 3 : Traditional knowledge---------- 9 Marks
15	• Traditional knowledge: Definition, nature, characteristics, scope and importance
16	• Indigenous Knowledge (IK): characteristics
17	• Traditional knowledge vis-a-vis Indigenous knowledge
18	• Traditional knowledge Vs western knowledge
19	• The need for protecting traditional knowledge
	Unit 4 : Yoga and Holistic Health Care----------15Marks
20	• Yoga: Meaning and Importance of Yoga
21	• Yoga and physical health, Yoga and psychological health, Yoga and intellectual health, Yoga and spiritual health, Yoga and social approach
22	• Introduction to Ashtanga Yoga, Yogic Kriyas (Shat Karma)

23	• Pranayama and its types; Active lifestyle and stress management through Yoga
24	• Physical Fitness, Health and wellness: Meaning and Importance of Wellness,
25	• Components of Wellness, Health and physical Fitness;
26	• Traditional sports & Regional Games for promoting wellness:
27	• Leadership through Physical Activity and Sports; Introduction to First Aid.
	Unit 5 : Himachal Pradesh: A Basic Information---- ---------- 9 Marks
28	• History, Culture, Heritage/ Tradition, Customs & Manners
29	• Regional Knowledge, Geographical Features, Constitutional History----------contd.
30	• Regional Knowledge, Geographical Features, Constitutional History
31	• Tourism Place & Scope
32	• Festivals and Fairs

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Semester - VI
ITOE304 (Multimedia Applications)
Subject plan for the Session Jan – June 2025

Lecture No.	Topic
	UNIT 1 Introduction to Multimedia (16hrs.)
1	Multimedia, Multimedia Elements
2	Multimedia Hardware - GPU, Digital Camera,
3	Scanner, Projector
4	DCS
5	Printer, MIDI Synthesizer
6	Light Pen, Touch Screen
7	Microphone, Speakers
8	DCS
9	Multimedia Software
10	Raster Graphics Software
11	Vector Graphics Editing Software
12	DCS
13	Audio and Video Editing Software
14	Multimedia Authoring
15	Video and Audio Data Compression Techniques – Lossy and Lossless
16	DCS
	UNIT 2 Multimedia Applications (16hrs.)
17	Video on Demand
18	Video Streaming, Multimedia Conferencing
19	Interactive Television
20	DCS
21	Educational Applications
22	Social Media
23	Healthcare
24	DCS
25	Augmented Reality, Virtual Reality
26	Visual Effects (VFX)
27	Modeling
28	DCS
29	Simulation
30	Marketing
31	Business Presentations
32	DCS
	UNIT 3 Computer Graphics (16hrs.)
33	Raster and Vector Graphics
34	Basic Terminology - Coordinate System

35	Pixel, Bitmap
36	DCS
37	Resolution, Dot Pitch
38	Color Depth, Aspect Ratio, Gamut
39	Color Models - RGB, CMYK, HSL
40	DCS
41	Aliasing, 2D Transformations – Translation, Rotation and Scaling
42	Vector Graphics Primitives
43	Shapes, Anchor Points, Bezier Curves
44	DCS
45	Combining Shapes - Union, Intersection, Exclusion and Minus
46	Stroke and Fill, Features of Adobe Illustrator
47	Features of Adobe Photoshop and Adobe Illustrator
48	DCS
	UNIT 4 Digital Audio & Video (16hrs.)
49	Characteristics of Audio
50	Frequency, Amplitude, Envelope
51	Digitization of Sound
52	DCS
53	Sampling 63 and Quantization
54	Synthetic Sound, MIDI, Digital Video
55	Basic Principles of Animation
56	DCS
57	Animation Terminology
58	Timeline Frames, Keyframes
59	Layers, Tweening
60	DCS
61	2D and 3D Animation
62	Introduction to different MPEG standards
63	MPEG-1, MPEG-2, MP3, AAC
64	DCS

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Computer Department 4th Semester

Wireless Communication Lesson plan for the SessionJan 2025 - May 2025 (COPE204-II) Programme Elective-II

ecture NO	Topic Name
	Unit 1:Introduction to Wireless Communication (10 Hrs) 10 Marks
1	Wireless communication and its applications
2	Advantages and disadvantages of wireless
3	DCS
4	**Types of Services : broadcast, paging,**
5	Celluar telephony, trunking radio
6	DCS
7	Cordless Telephony , WLAN,Sensor Networks,Fixed wireless Access
8	Fixed wireless Access,Challenges in wireless Communication
9	DCS
10	PAN,Adhoc
	Unit-2 : Electromagnetic Spectrum (8Hrs) 10 Marks
11	Eectromagnetic Spectrum,Licensed/Unlicensed Spectrum bands
12	ISM Band,Terrestrial MicrowaveCommunication
13	DCS
14	Satellite Microwave Communication ,Infrared and Light Wave Communication
15	Attenuation,Distortion,Noise and Interface
16	**DCS**
17	Path Loss,Shadowing
18	Fading
	Unit-3 : Fundamentals of Wireless Communication Systems (12 Hrs) 15 Marks
19	Concept of bandwidth, analog and digital signals
20	analog and digital signals,Data Rate,Signal Strength
21	DCS
22	SNR, RSSI, Electromagnetic wave Propogation
23	Ground waves,Sky waves and LOS Propogation
24	DCS

25	Radio waves, microwaves,Infrared
26	Overview of Propagation Mechanisms: reflection PTO
27	DCS
28	Diffraction and scattering,Outdoor Propagation
29	Indoor propagation
30	DCS
	Unit-4 : Cellular Architecture (12 Hrs) 15 Marks
31	Cellular Communication: cellular concept, cellular system architecture
32	Cellular Communication: cellular concept, cellular system architecture
33	DCS
34	Cell ,clusters,Frequency reusecell splitting, handoff,
35	Digital Cellular System: TDMA, ETDM, PCS, CDMA,
36	DCS
37	Digital Cellular System: TDMA, ETDM, PCS, CDMA,
38	Global System for Mobile Communication (GSM), GSM network: switching system, BSS, operation and support system,
39	DCS
40	Global System for Mobile Communication (GSM), GSM network: switching system, BSS, operation and support system,
41	Generations of cellular networks and their features (1G – 5G).
42	DCS
	Unit-5 : Wireless LAN Technology and Bluetooth (6 Hrs) 10 Marks
43	Wireless LAN (WLAN), IEEE-802.11,
44	WLAN applications, WLAN types, WLAN problems – Hidden & Exposed Station problems
45	DCS
46	Bluetooth technology, Direct Sequence Spectrum Scheme, Frequency Hopping Spread Spectrum
47	Frequency Hopping Spread Spectrum and Personal Area Networks
48	DCS

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COMPUTER ENGGINEERING

Semester - VI

ITPC204 (Data base Management System)

Subject plan for the Session Jan – May 2025

Lecture No.	Topic
	Unit-1: Introduction to Database Systems **8Hours**
1	Database Systems, Database and its Purpose
2	Comparison of Database Approach with File-based and
3	Traditional Record Keeping approaches
4	Dot clearing Session
5	Advantages and Disadvantages of Database Approach
6	Classification of Database Users, Role of DBA
7	Role of DBA
8	Dot clearing Session
	Unit-2: Database System Concepts and Architecture **12 Hours**
9	Data Models, Schemas, and Instances
10	ANSI/SPARC Architecture of a Database System
11	External Level, Conceptual Level
12	Dot clearing Session
13	Internal Level, Mapping
14	Data Independence
15	Logical Data Independence,
16	Dot clearing Session
17	Physical Data Independence
18	Relational Database
19	Model, Relations Attributes, Tuples
20	Dot clearing Session
	Unit 3 : Relational and E-R Models **10 Hours**
21	Domains;
22	Key - Primary Key,
23	Candidate Keys
24	Dot clearing Session
25	Alternate Keys, Super key
26	Secondary Key, Foreign Keys; Database Constraints.
27	Entity, Entity Sets Strong and Weak Entities
28	Dot clearing Session
29	Association, Relationship
30	Roles, and Structural Constraints ER Diagrams
	Unit 4 : Database Dependencies and Normalization **10 Hours**
31	Functional Dependencie
32	Dot clearing Session
33	Functional Dependencie
34	Trivial and Non-trivial Dependencies
35	Non-Loss Decomposition,
36	Dot clearing Session
37	Normalization
38	, First, Second and Third Normal Forms
39	First, Second and Third Normal Forms, Boyce-Codd Normal Form

40	Dot clearing Session
	Unit 5 : Overview of MySQL **12 Hours**
41	MySQL, Features of MySQL,
42	Database Objects - Database, Table, View, Index, Alias;
43	MySQL Object Naming, Keywords, User-defined Variables,
44	Dot clearing Session
45	Data Types - Numeric, Date and Time
46	. String Types; Operators: Arithmetic,
47	, Logical, Relational, String
48	Dot clearing Session
49	MySQL System Schema, MySQL
50	Database Users and Roles, Database Privileges, Access Control
51	Account Management, MySQL Server and MySQL Client
52	Dot clearing Session
	Unit 6 : Structure Query Language using MySQL **12 Hours**
53	SQL, DDL Statements : CREATE, DROP, ALTER, RENAME
54	DML Statements: INSERT, UPDATE , DELETE
55	SELECT; SELECT Clauses - FROM, WHERE, ORDER BY, GROUP BY, HAVING
56	Dot clearing Session
57	Join Operations - Inner, Left, Right and Outer Joins; Subqueries
58	Set Operations - Union, Intersect, Minus; GRANT and REVOKE Privileges;
59	Transaction Statements - COMMIT, ROLLBACK, SAVEPOINT;
60	Dot clearing Session
61	Prepared Statements, SQL Functions - ABS, ROUND, FLOOR, CEIL, SQRT, POWER, TRUNCATE, LOG, NOW, DATE, TIME
62	CURDATE, CURTIME, DAY, MONTH, YEAR, DATEDIFF, DATE_SUB, DATE_ADD, DATE_FORMAT, CONCACT
63	LENGTH, UPPER, LOWER, LEFT, RIGHT, LTRIM, RTRIM, MAX, MIN, SUM, AVG, COUNT, CAST, STR_TO_DATE
64	Dot clearing Session

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Semester - VI
HS 302 (Entreprenureship and start ups)
Subject plan for the Session Jan – May 2025

Lecture No.	Topic
	UNIT 1 - Introduction to Entrepreneurship and Start–Ups 12 Hours (12hrs.)
1	Definitions
2	Traits of an entrepreneur
3	Intrapreneurship
4	DCS
5	Motivation
6	Types of Business Structures
7	Types of Business Structures
8	DCS
9	Similarities/differences between entrepreneurs and managers
10	Similarities/differences between entrepreneurs and managers
11	Similarities/differences between entrepreneurs and managers
12	DCS
	UNIT 2 - Business Ideas and their implementation (10hrs.)
13	Business Ideas
14	implementation
15	Business Ideas and their implementation
16	DCS
17	Discovering ideas
18	visualizing the business
19	Activity map
20	DCS
21	Activity map
22	Business Plan
	UNIT 3 -Idea to Start-up (12 Hours)
23	DCS
24	Market Analysis
25	Identifying the target market
26	Identifying the target market
27	DCS
28	Competition evaluation
29	and Strategy Development
30	Competition evaluation and Strategy Development
31	DCS
32	Marketing and accounting
33	Marketing and accounting
34	Risk analysis
	UNIT 4 –Management 12 Hours
35	DCS
36	Company's Organization Structure
37	Company's Organization Structure
38	Recruitment and management of talent.
39	DCS

40	Recruitment and management of talent.	
41	Recruitment and management of talent.	
42	Financial organization and management	
43	DCS	
44	Financial organization and management	
45	Financial organization and management	
46	Financial organization and management	
	UNIT 5- Financing and Protection of Ideas	**10 Hours**
47	DCS	
48	Financing methods	
49	Financing methods available for start-ups in India	
50	Communication of Ideas to potential investors–Investor Pitch	
51	DCS	
52	Communication of Ideas to potential investors–Investor Pitch	
53	Communication of Ideas to potential investors–Investor Pitch	
54	Patenting and Licenses	
55	DCS	
56	Patenting and Licenses	
	UNIT 6	**8 Hours**
57	Exit strategies for entrepreneurs	
58	Exit strategies for entrepreneurs	
59	DCS	
60	bankruptcy	
61	bankruptcy	
62	and succession and harvesting strategy	
63	DCS	
64	and succession and harvesting strategy	

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Semester - VI

IoTOE302 (Data Warehousing and Data Mining)

Subject plan for the Session Jan – June 2025

Lecture No.	Topic
	UNIT 1 Introduction to Data Warehousing **(14hrs.)**
1	Data Warehouse
2	OLTP, OLAP
3	Comparison of OLTP and OLAP systems
4	DCS
5	Three-tier data warehouse architecture
6	Data Warehouse Models
7	Enterprise warehouse, Data mart
8	DCS
9	Virtual warehouse
10	Types of OLAP Servers
11	Relational OLAP (ROLAP)
12	DCS
13	Multidimensional OLAP (MOLAP)
14	Hybrid OLAP (HOLAP)
	UNIT 2 Multidimensional Data Models **(10hrs.)**
15	Multidimensional database
16	DCS
17	Data cube
18	Concept hierarchy
19	OLAP Operations: Roll-up, Drilldown
20	DCS
21	Slice and dice, Pivot (rotate)
22	Schemas for multidimensional databases: Stars Schema
23	Snowflakes, and Fact Constellations Schemas
24	DCS
	UNIT 3 Data Mining & KDD Process **(14hrs.)**
25	Data Mining
26	Importance of data mining
27	KDD process: Data preprocessing
28	DCS
29	Data cleaning , Data integration
30	Data selection
31	Data transformation and data mining
32	DCS
33	Pattern evaluation

35	Classification of data mining systems
36	DCS
37	Technologies used in data mining
38	Major issues in Data Mining
	UNIT 4 Building Data Warehouse **(14hrs.)**
39	ETL process
40	DCS
41	Top-down approach
42	Bottom-up approach
43	Advantages and Disadvantages of Top-down & Bottom-up approach
44	DCS
45	Steps for Data warehouse design
46	Choosing a business process to model
47	Choosing the grain of the business process
48	DCS
49	Choosing the dimensions
50	Choosing the measures
51	Recommended approach for data warehouse development
52	DCS
	UNIT 5 Applications & Trends in Data Mining **(12hrs.)**
53	Data Mining Applications
54	Data Mining for Financial Data Analysis
55	Retails and Telecommunication Industries
56	DCS
57	Science and Engineering
58	Intrusion Detection and Protection
59	Recommendation System
60	DCS
61	Recent trends in data mining
62	Deep Learning and Neural Networks, Big Data Integration
63	Natural Language Processing (NLP), Edge Computing
64	DCS

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Department: Computer Engineering

6th Semester, SL (Scripting language)

Lecture No.	Topic Name
	Unit 1: Introduction to Python
1	Features of Python; Application areas of Python; Execution modes of Python - interactive mode and script mode; Code indentation
2	Comments; Python statements - simple and compound; Python tokens - identifiers, keywords, operators,
3	DCS
4	DCS
5	DCS
6	Delimiters, and literals,Variables naming conventions
7	Need of input and output statements
8	DCS
9	DCS
10	DCS
11	Reading from standard input using the input() function
12	Writing to standard output using the print() function; Escape sequences.
	Unit 2: Data Types
13	DCS
14	DCS
15	DCS
16	Data Types: Numbers - integer, floating point and complex
17	Sequences - strings, lists and tuples; Sets; Mappings - dictionaries
18	DCS
19	DCS
20	DCS
21	Mutable and Immutable data types
22	Type conversion - Explicit and implicit conversion
23	DCS
24	DCS
	Unit 3: Operators
25	DCS
26	Arithmetic operators; Relational operators; Assignment Operators
27	Logical Operators; Bitwise operators
28	DCS
29	DCS
30	DCS

31	Identity operators and membership operators
32	Precedence and associativity of operators
33	DCS
34	DCS
35	DCS
36	Arithmetic expressions
	Unit 4: String, List, Tuple, Set and Dictionary Methods
37	Operations on sequences - concatenation, repetition
38	DCS
39	DCS
40	DCS
41	Membership testing, indexing, slicing, String methods - capitalize(), lower(), upper(), title(), count(), find(), replace()
42	List methods - count(), index(), append(), insert(), remove(), pop(), reverse(), sort(), clear();
43	DCS
44	DCS
45	DCS
46	Tuple methods - count(), index(); Set methods - add(), clear(), remove(), discard(), intersection(), difference(), union(), pop();
47	Dictionary methods - keys(), values(), items(), clear(), pop().
48	DCS
	Unit 5: Control Statements
49	DCS
50	DCS
51	Conditional statements - The if statement and its variants - if, if...else, if...elif...else; Comparison chaining
52	loop statements - while, for; use of else in loops; Jump statements - break, continue, pass
53	DCS
54	DCS
55	DCS
56	The range() function; Comprehension - list comprehension
57	Set comprehension and dictionary comprehension.
58	DCS
59	DCS
60	DCS
	Unit 6 : Modules, Packages and Exception Handling
61	Python modules and packages
62	Exception handling in Python
63	DCS
64	DCS
	Unit 7: Functions
65	DCS
66	Advantages of functions; User defined functions - function definition
67	Function call, return values; Parameter passing
68	DCS
69	DCS

70	DCS
71	Keyword and default arguments
72	Variable scope and lifetime - local and global variables
73	DCS
74	DCS
75	DCS
76	Lambda functions
	Unit 8: File Handling in Python
77	File opening modes; Python methods for reading, writing and moving within a file - read(), readline(), readlines()
78	DCS
79	write(), writelines(), truncate(), flush(), seek(), tell(); Use of with keyword
80	DCS

Jitender Mohan Sharma
Lecturer Computer Application
GMP Chamba

Government Millennium Polytechnic, Chamba

Department: Computer Engineering

4th Semester, Data Structures & Algorithms

Lecture No.	Topic Name
	Unit 1: Introduction 12 hours
1	Algorithms-Definition, Characteristics
2	Efficiency, Notations
3	Asymptotic, Big-Oh, Omega, Theta Notation
4	DCS
5	Data Types
6	Data Structures
7	Characteristics
8	DCS
9	Types- Linear, Non-linear
10	Operations
11	Efficiency
12	DCS
	Unit 2: Arrays, Structures and Pointers 16 hours
13	Arrays, One dimensional array
14	Multi-Dimensional Arrays
15	One Dimensional Arrays-Memory representation
16	DCS
17	Traversal, Insertion and Deletion
18	Sorting and Searching
19	Two dimensional Arrays- Memory representation
20	DCS
21	Implement Matrices using Two dimensional Arrays
22	Matrix opetations - Addition, Subtraction
23	Matrix opetations - Multiplication, Transpose, Structure accessing
24	DCS
25	Structure members using (.) and (->) operators, Self refrencing structure
26	Pointers- Dynamic Memory allocation using Malloc, calloc, free
27	realloc, Manipulate arrays using pointers
28	DCS
	Unit -3: Sorting and searching 12 Hours
29	Searching techniques - Linear search
30	Searching techniques - Binary search
31	Sorting techniques - Selection Sort
32	DCS
33	Sorting techniques - Insertion sort
34	Sorting techniques - Bubble sort
35	Sorting techniques - Quick sort
36	DCS
37	Sorting techniques - Quick sort continues

38	Sorting techniques - Merge sort
39	Efficiency of Sorting Algorithms
40	DCS
	Unit -4: Linear Data structures **12 hours**
41	Linked List - Representation
42	Advantages and Disadvantages
43	Implelentation, Operations
44	DCS
45	Doubly Linked list
46	Stacks, Stack operations - Push, Pop
47	Implementation of Stack using Arrays and Linked list
48	DCS
49	Queues, Queues operations
50	Implementation of Queue using Arrays
51	Implementation of Queue using Linked list
52	DCS

	Unit-5: Non-Linear Data structures **12 Hours**
53	Tree, Tree terminology - Node, root, Parent
54	Tree terminology - Children, Siblings, Edge, Leaves
55	Binary Tree, Binary tree representation
56	DCS
57	Binary tree traversal
58	Binary search tree
59	Graphs, Graphs Terminology
60	DCS
61	Directed Graphs, Weighted Graphs
62	Graphs implementation using Adjacency Matrix
63	Graphs implementation using Adjacency List
64	DCS

Subject Teacher

Arun Seth
Lecturer Computer Engg.
GMPC Chamba (H.P.)

Government Millennium Polytechnic, Chamba

Department: Computer Engineering

4th Semester, Advanced Computer & Network

Lecture No.	Topic Name
	Unit 1:
1	Review of Networking Basics
2	Review of Networking Basics
3	Advance Topics in IPv4 – Subnetting
4	DCS
5	Multicasting,
6	Routing Protocol: IGMP
7	Routing Protocol: DVMRP
8	DCS
9	Routing Protocol: PIM
10	Advance Topics in TCP – flow management,
11	congestion avoidance
12	DCS
13	protocol spoofing
14	Ipv6
	Unit - 2
15	Telecom Networks
16	DCS
17	Switching Techniques
18	Introduction to Frame Relay
19	ATM, MPLS
20	DCS
21	VSAT Communication
22	Star and Mesh architectures, bandwidth reservation
23	Wireless Networks - WiFi
24	DCS
25	WiMax
26	Cellular Phone Technologies – GSM
27	CDMA, 3G, 4G
28	DCS
	Unit -3:
29	Network Redundancy
30	Load Balancers
31	Load Balancers
32	DCS
33	Caching
34	Storage Networks
35	Quality of Service
36	DCS
37	Network Monitoring

38	Network Monitoring: SNMP
39	Network Monitoring: RMON
40	DCS
	Unit -4:
41	Introduction to Network Security
42	Introduction to Network Security
43	VLAN
44	DCS
45	VPN
46	Firewall
47	Firewall
48	DCS
49	IPS
50	Proxy Servers
51	Proxy Servers
52	DCS

	Unit-5:
53	Network Simulation
54	Network design case studies and exercises
55	Network design case studies and exercises
56	DCS
57	Network design case studies and exercises
58	IP Addressing schema
59	IP Addressing schema
60	DCS
61	Protocol Analysers
62	Protocol Analysers: Wireshark
63	Protocol Analysers: Wireshark
64	DCS

Subject Teacher

Arun Seth
Lecturer Computer Engg.
GMPC Chamba (H.P.)