

H.E.I.S Department

**SYLLABUS PLAN**

Bca sem 3

**Subject : Fundamentals of Database Management System**

Session 2022-2023

Month	Topic
Aug (Month 1)	Week 1 Introduction: Database Approach, Characteristics of a Database Approach, Database System Environment.
	Week 2 Roles in Database Environment: Database Administrators, Database Designers, End Users, Application Developers.
	Week 3 Database Management Systems: Definition, Characteristics, Advantages of Using DBMS Approach
	Week 4 Classification of DBMSs
Sep (Month 2)	Week 1 Architecture: Data Models, Categories of Data Models- Conceptual Data Models, Physical data Models, Representational Data Model
	Week 2 Object Based Models, Record Based Models, Database Schema and Instance, Three Schema Architecture
	Week 3 Data Independence – Physical and Logical data Independence
	Week 4 MST
Oct (Month 3)	Week 1 Database Conceptual Modelling by E-R model: Concepts, Entities and Entity Sets, Attributes, Mapping Constraints
	Week 2 E-R Diagram, Weak Entity Sets, Strong Entity Sets. Enhanced E-R Modelling: Aggregation, Generalization
	Week 3 Converting ER Diagrams to Tables. Relational Data Model: Concepts and Terminology, Characteristics of Relations
	Week 4 Integrity Constraints- Entity and Referential Integrity constraints, Keys- Super Keys, Candidate Keys, Primary Keys, Secondary Keys and Foreign, Relational Algebra: Basic Operations, Additional Operations, Example Queries.
Nov (Month 4)	Week 1 Database Design: Informal Design Guidelines for Relation Schemas, Problems of Bad Database Design
	Week 2 Normalization: Functional Dependency, Full Functional Dependency, Partial Dependency, Transitive Dependency,
	Week 3 Normal Forms– 1NF, 2NF, 3NF, Boyce-Codd NF
	Week 4 MS-ACCESS: introduction to MS-ACCESS, working with databases and tables, queries in Access, Applying integrity constraints, Introduction to forms, sorting and filtering,

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Computer Department (HEIS)

Class B.C.A Sem. III

(Session 2022-2023)

Subject : English Communication Skills- I

Week	Lesson scheduled
1 <sup>st</sup>	<ul style="list-style-type: none"><li>• On His Blindness</li><li>• The Village Schoolmaster</li><li>• Class Test</li></ul>
2 <sup>nd</sup>	<ul style="list-style-type: none"><li>• The Tyger</li><li>• Dover Beach</li><li>• Class Test</li></ul>
3 <sup>rd</sup>	<ul style="list-style-type: none"><li>• The Listeners</li><li>• Night of the Scorpion</li><li>• Class Test</li></ul>
4 <sup>th</sup>	<ul style="list-style-type: none"><li>• Grammar Exercise 92-95</li><li>• Class Test</li></ul>
5 <sup>th</sup>	<ul style="list-style-type: none"><li>• Grammar Exercise 96-100</li><li>• Class Test</li></ul>
6 <sup>th</sup>	<ul style="list-style-type: none"><li>• Grammar Exercise 101-105</li><li>• Class Test</li></ul>
7 <sup>th</sup>	<ul style="list-style-type: none"><li>• Revision</li></ul>
8 <sup>th</sup>	<ul style="list-style-type: none"><li>• MST</li></ul>
9 <sup>th</sup>	<ul style="list-style-type: none"><li>• MST</li></ul>
10 <sup>th</sup>	<ul style="list-style-type: none"><li>• The Solitary Reaper</li><li>• Kubla Khan</li><li>• Class Test</li></ul>
11 <sup>th</sup>	<ul style="list-style-type: none"><li>• To a Skylark</li><li>• La Belle Dame Sans Merci</li><li>• Class Test</li></ul>
12 <sup>th</sup>	<ul style="list-style-type: none"><li>• Grammar Exercise 106-110</li><li>• Class Test</li></ul>
13 <sup>th</sup>	<ul style="list-style-type: none"><li>• Grammar Exercise 111-115</li><li>• Class Test</li></ul>
14 <sup>th</sup>	<ul style="list-style-type: none"><li>• Grammar Exercise 116-120</li><li>• Class Test</li></ul>
15 <sup>th</sup>	<ul style="list-style-type: none"><li>• Comprehension Exercises</li></ul>
16 <sup>th</sup>	<ul style="list-style-type: none"><li>• Revision and Class test</li></ul>

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**LESSON PLAN****CLASS: BCA SEM IV****Subject : English Communication Skills- II****Session: 2022-23**

Month	Topic
Feb(Month 1)	Week 3 Introduction to the play All My Sons, Text
	Week 4 All My Sons – Text
March (Month 2)	Week 1 All My Sons – Text, Plot, Characters
	Week 2 All My Sons- Summary, Themes, Incidents
	Week 3 Essay Writing Contemporary issue or Event
	Week 4 Grammar Exercise 121-123
April (Month 3)	Week 1 Grammar Exercise 124- 127
	Week 2 Grammar Exercise 128- 131
	Week 3 Grammar Exercise 132- 135
	Week 4 Grammar Exercise 136- 138
May (Month 4)	Week 1 Grammar Exercise 139- 141
	Week 2 Grammar Exercise Appendix 7
	Week 3 Grammar Exercise Appendix 7
	Week 4 Revision
June (Month 5)	Week 1 Revision

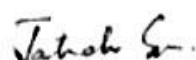
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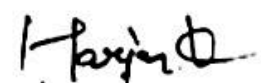
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LESSON PLAN	
BCA Sem-IV	
Subject- RDBMS	
January 2023 to April 2023	
Month	Topic
January (Month-1)	WEEK-4: Introduction to RDBMS Product and their Features, Difference between DBMS and RDBMS, Relationship among application programs, RDBMS,
February (Month-2)	WEEK-1: Basic File Operations: Opening Files, Closing Files, Reading and Writing, Seeking, File Organization: Field and Record structure in file, Record Types, Types of file organization, Sequential, Indexed, and Hashed.
	WEEK-2: Transaction Management: Transaction Concept, Properties, Transaction States, Concurrent Execution, Serializability, Conflict Serializability
	WEEK-3: View Serializability, Recoverability, Recoverable Schedule, Cascadless Schedule, Concurrency Control: Lock Based Protocol, Locks, Granting of Locks, Two Phase Locking Protocol, Timestamp Based Protocol, Timestamp, Timestamp ordering protocol, Thomas's Write Rule, Validation Based Protocol, Deadlock Handling, Deadlock Prevention, Deadlock Detection, Deadlock Recovery
	WEEK-4 :- MST
March (Month-3)	WEEK-1: Recovery System: Failure Classification, Transaction Failure, System Crash, Disk Failure, Storage Structures, Storage Types, Data Access, Recovery & Atomicity, Log based Recovery
	WEEK-2: Deferred Database Modification, Immediate Database Modification, Checkpoints, Recovery with Concurrent Transaction, Transaction Rollback, Restart Recovery, Remote Backup System
	WEEK-3: Relational Query Language: DDL, DML, DCL. Introduction to Oracle: Oracle as client/server architecture, getting started, creating, modifying
	WEEK-4: dropping databases. Inserting, updating, deleting data from databases, SELECT statement, Data constraints ( Null values, Default values, primary, unique and foreign key concepts)
April (Month-4)	WEEK-1: Computing expressions, renaming columns, logical operators, range searching, pattern matching, Oracle functions, grouping data from tables in SQL, manipulating dates.
	WEEK-2: Working with SQL: triggers, use of data base triggers, database triggers Vs. SQL*forms, types of triggers, how to apply database triggers, BEFORE vs. AFTER triggers, combinations, syntax for creating and dropping triggers.

  
Manpreet Singh

  
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LESSON PLAN	
MSc. IT Sem-IV	
Subject- LINUX	
January 2023 to April 2023	
Month	Topic
January (Month-1)	WEEK-1: Introduction: Overview of Linux, Linux's History, Advantages of Linux, Minimum System Requirements; Installing Linux: Choosing Text or Graphics Installation, Setting up your Hard Drive, Understanding the Swap Space
February (Month-2)	WEEK-1: Creating the Linux File-system partition, Setting up the mouse, root password and Ethernet, Configuration X, Selecting packages to Install, Creating the Boot Disk. Using LILO boot manager: Installing LILO, LILO make-file, Updating LILO, Removing or Disabling LILO, Troubleshooting LILO. The Boot Process, Startup Scripts, Shutdown, Halt and reboot,
	WEEK-2: Creating a New Login, Virtual Terminals, Running as root. Basic Linux Commands : How Linux Commands Work, Command Options & Parameters, Input and Output Redirection, Mian pages, Wildcards : * and ?, Environment Variables, The process status Commands : ps, termination command : kill, the su command, the grep command. Linux File System : Common types of files, filenames, Inodes, The root directory,
	WEEK-3 How directories are named, Navigating the Linux file System : pwd command, Absolute and relative filenames; cd command, Creating and Deleting files : Cat, Creating Directories, Moving and Copying files, Moving Directories, Removing files and directories, Important directories in the Linux file System : / , /home, /bin, /usr, /usr/bin, /var/spool, /dev, /sbin, /etc.
March (Month-3)	WEEK-4: File and Directory ownership, Groups, Changing group ownership, File Permissions, UMASK Setting, Changing File Permission, Changing directory permissions; Bash : What is Shell ? How the Shell gets Started, The most common Shells;
	WEEK-1:-Shell Scripting: Creating and Executing Shell Programs, Using variables : Assigning a value to a variable, Accessing the value of a variable, Positional Parameters and other Built-In Shell Variables; Special Characters
	WEEK-2: Conditional Statements : if Statement , case Statement; Iteration Statements : for Statement, while Statement, until Statement, shift Command, select Statement, repeat Statement, Functions. Editing and Typesetting : Text Editors vi, The vi Editor, Starting vi, vi modes,
	WEEK-3: Inserting Text, Quitting vi, Moving the Cursor, Deleting Text, Copying and Moving Text, Searching and Replacing Text, Setting Preferences. Configuring the X Window: Xfree86 Software Distribution, Choosing an X Server, Installing Xfree86 Manually, Installing Xfree86 using a Script, Path Environment Variable; Configuring Xfree86; The xconfig and XF86Config Files in Detail: Pathnames, Keyboard Setting, Mouse Definition, Monitor Model, Video Cards, The Xfree86 Server, Testing Xfree86 Configurations, The .xinitrc File.
April (Month-4)	WEEK-4: MST
	WEEK-1: Linux for System Administrators: System Administration Basics, The root Account, Starting and Stopping the System, Booting from a Floppy, Using LILO to Boot, Shutting Down Linux; Mounting File Systems : Mounting a Floppy, CD-ROM, Creating a New file System, Un-mounting file Systems, Backup and restore: Compressing files with gzip. Using tar and cpio:
April (Month-4)	WEEK-2: Setting up your System : Setting the System Name, Using a Maintenance Disk, Forgetting the root Password, Setting the Login Message. Networking & Network Services: What is TCP/IP? IP Address, Ports, Sockets, Subnets, Routing, Hardware Requirements, Configuring the Network, Configuration Files, Testing and Troubleshooting, The netstart Command, ping, traceroute, Mail, News, NFS, www, FTP, Telnet, DNS. Network Security: Firewalls.

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**H.E.I.S Department**

**Syllabus Plan**

**Ica Sem 4**

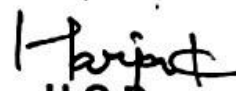
**Subject : Management Information Systems**

**Session 2022-2023**

Month	Topic
Jan (Month 1)	Week 1 Management Information system: Meaning and definition, Role of information system
	Week 2 Nature and scope of MIS
	Week 3 Information and system concepts: Definition and types of information, Information quality, dimensions of information, value of information
	Week 4 general model of human as an information processor. System related concepts, elements of a system, and types of system
Feb (Month 2)	Week 1 Role and importance of Management: Introduction, levels and functions of management.
	Week 2 Structure and classification of MIS
	Week 3 Components of MIS, Framework for understanding MIS
	Week 4 Robert Anthony's hierarchy of management activity
March (Month 3)	Week 1 Information requirements and levels of management, Decision making concept.
	Week 2 types of decisions, methods of choosing among alternatives, Role of MIS in decision making.
	Week 3 Simon's model of decision making
	Week 4 Structured and unstructured decisions.
April (Month 4)	Week 1 Development of MIS: Stages in the development of MIS
	Week 2 System development approaches: Waterfall model, Prototyping, Iterative enhancement model, Spiral model.
	Week 3 Applications of information systems in Functional areas: Marketing MIS, Financial MIS, Production MIS, Personnel MIS.

  
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**Department of Computer Science (HEIS), Government College, Ropar (2022-23)**  
**Class BCASem. 4<sup>th</sup> Subject Computer Network**

Week	Topics
Week 1	Introduction to Computer Networks, Definition and importance of computer networks, Types of networks: LAN, MAN, WAN, Network structure: point-to-point, multicast, broadcast
Week 2	Network Architecture and Design, Network architecture models, OSI and TCP/IP reference models, Design considerations for network layers
Week 3	OSI Model and Protocol Hierarchies, Detailed study of the OSI model layers, Functions and protocols at each OSI layer
Week 4	TCP/IP Model and Comparison, Overview of the TCP/IP model layers, Comparison between OSI and TCP/IP models
Week 5	Data Link Layer and Framing, Data Link Layer functions and services, Framing techniques: character stuffing, bit stuffing
Week 6	Error Control and Flow Control, Error control mechanisms: parity, CRC, Flow control methods: stop-and-wait, sliding window
Week 7	Network Layer Services and Routing, Network Layer functions and design considerations, Routing algorithms: static and dynamic routing
Week 8	Congestion Control Algorithms, Introduction to congestion control, Leaky bucket and token bucket algorithms
Week 9	Transport Layer and Connection Management, Transport Layer functions and services, Connection establishment, addressing, and release
Week 10	Transport Layer Protocols, TCP: reliable, connection-oriented protocol, UDP: connectionless, lightweight protocol
Week 11	Application Layer and DNS, Application Layer overview and services, DNS: domain hierarchy, resolution process
Week 12	Electronic Mail and SMTP, Architecture of electronic mail, Simple Mail Transfer Protocol (SMTP)
Week 13	World Wide Web and HTTP, The World Wide Web: concepts and components, Hypertext Transfer Protocol (HTTP)
Week 14	Introduction to Network Security, Importance of network security, Basics of cryptography: substitution and transposition ciphers
Week 15	Public-Key Cryptography and RSA, Fundamental cryptographic principles, Public-key algorithms: RSA and its working
Week 16	Digital Signatures and Recap, Digital signatures: symmetric-key and public-key signatures, Message digests and their role in security

  
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Department of Computer Science (HEIS), Government College, Ropar (2022-23)  
Class BCA Sem. 4<sup>th</sup> Subject RDBMS with MS-Access

Time Period	Topics to be Covered
Week 1	Introduction to RDBMS Product and their Features, Difference between DBMS and RDBMS, Relationship among application programs, RDBMS
Week 2	Basic File Operations: Opening Files, Closing Files, Reading and Writing, Seeking
Week 3	File Organization: Field and Record structure in file, Record Types, Types of file organization, Sequential, Indexed, and Hashed File Organization
Week 4	Transaction Management: Transaction Concept, Properties, Transaction States, Concurrent Execution
Week 5	Serializability, Conflict Serializability, View Serializability, Recoverability, Recoverable Schedule, Cascadless Schedule
Week 6	Concurrency Control: Lock Based Protocol, Locks, Granting of Locks, Two Phase Locking Protocol
Week 7	Timestamp Based Protocol, Timestamp, Timestamp ordering protocol, Thomas's Write Rule, Validation Based Protocol, Deadlock Handling, Deadlock Prevention, Deadlock Detection, Deadlock Recovery
Week 8	MST (Mid-Semester Test)
Week 9	MST (Mid-Semester Test)
Week 10	Recovery System: Failure Classification, Transaction Failure, System Crash, Disk Failure
Week 11	Storage Structures, Storage Types, Data Access, Recovery & Atomicity
Week 12	Log based Recovery, Deferred Database Modification,
Week 13	Recovery with Concurrent Transaction, Transaction Rollback, Restart Recovery
Week 14	Remote Backup System, Relational Query Language: DDL, DML, DCL,
Week 15	Introduction to Oracle: Oracle as client/server architecture, Getting started, creating, modifying, dropping databases.
Week 16	Immediate Database, Modification, Checkpoints

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*Harjot*  
HOD's Signature

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LESSON PLAN (2022-23)


Class BCA 4<sup>th</sup> sem(226)

Subject RDBMS

SESSION	TOPIC	REFERENCES
Week 1	Introduction to RDBMS Product and their Features, Difference between DBMS and RDBMS, Relationship among application programs, RDBMS	
Week 2	Basic File Operations: Opening Files, Closing Files, Reading and Writing, Seeking	
Week 3	File Organization: Field and Record structure in file, Record Types, Types of file organization, Sequential, Indexed, and Hashed.	
Week 4	Transaction Management: Transaction Concept, Properties, Transaction States, Concurrent Execution	
Week 5	Mid semester Test-I	
Week 6	Serializability, Conflict Serializability, View Serializability, Recoverability, Recoverable Schedule, Cascadeless Schedule	
Week 7	Concurrency Control: Lock Based Protocol, Locks, Granting of Locks, Two Phase Locking Protocol, Timestamp Based Protocol, Timestamp.	
Week 8	Timestamp ordering protocol, Thomas's Write Rule, Validation Based Protocol, Deadlock Handling, Deadlock Prevention, Deadlock Detection, Deadlock Recovery	
Week 9	Recovery System: Failure Classification, Transaction Failure, System Crash, Disk Failure, Storage Structures, Storage Types, Data Access.	
Week 10	Recovery & Atomicity, Log based Recovery, Deferred Database Modification, Immediate Database Modification	
Week 11	Mid semester Test-II	
Week 12	Checkpoints, Recovery with Concurrent Transaction, Transaction Rollback, Restart Recovery, Remote Backup System	
Week 13	Transaction, Transaction Rollback, Restart Recovery, Remote Backup System  Relational Query Language: DDL, DML, DCL. Introduction to Oracle: Oracle as client/server architecture, getting started, creating, modifying, dropping databases, Inserting, updating, deleting data from databases, SELECT statement, Data constraints (Null values, Default values, primary, unique and foreign key concepts)	
Week 14	Computing expressions, renaming columns, logical operators, range searching, pattern matching, Oracle functions, grouping data from tables in SQL, manipulating dates.	
Week 15	Working with SQL: triggers, use of data base triggers, database triggers Vs. SQL*forms, types of triggers, how to apply database triggers, BEFORE vs. AFTER triggers, combinations, syntax for creating and dropping triggers..	
Week 16	Revision	

  
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