

**SUMMARY OF LESSON PLAN OF COLLEGE FACULTY (Dr. Rahul Hooda)**

NAME OF THE COLLEGE- GOVT. COLLEGE, Alewa ACADEMIC SESSION 2023-24 EVEN SEMESTER FOR THE MONTH OF Feb to May 2024

Sr. NO	Name of the Assistant / Associate Professor / Class	Subject/week/month	Topic/ Chapters to be covered
1	Dr. Rahul Hooda	Computer Science	<b>Major: Problem Solving through C</b>
	B.Sc 2nd Sem	Feb	Overview of C: History, Importance, Structure of C Program, Character Set, Constants and Variables, Identifiers and Keywords,
			Data Types, Assignment Statement, Symbolic Constant. Input/output: Formatted I/O Function-, Input Functions viz.
			scanf(), getch(), getche(), getchar(), gets(), output functions viz. printf(), putchar(), puts().
			Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment, Conditional Operators and Special Operators Operator Hierarchy;
		1st week of March	(I-Assignment)
		March	Arithmetic Expressions, Evaluation of Arithmetic Expression, Type Casting and Conversion.
			Decision making with if statement, if-else statement, nested if statement, else-if ladder, switch and break statement, goto statement, Looping Statements: for, while, and do-while loop, jumps in loops.
			Arrays: One Dimensional arrays - Declaration, Initialization and Memory representation; Two Dimensional arrays -Declaration,
			Initialization and Memory representation. Functions: definition, prototype, function call, passing arguments to a function: call by value; call by reference, recursive functions.
		4th week of March	Unit Test
		April	Strings: Declaration and Initialization, String I/O, String Manipulation Functions: String Length, Copy, Compare, Concatenate etc.
			User defined data types: Structures - Definition, Advantages of Structure, declaring structure variables, accessing structure members, Structure members initialization, Array of Structures;
			Unions – Union definition; difference between Structure and Union.
		May	Revision
2	Dr. Rahul Hooda	Computer Science	<b>Object Oriented Programming with C++ / Operating System</b>
	B.Sc 4th Sem	Feb	Object oriented Programming: Object-Oriented programming features and benefits. Object-Oriented features of C++, Class and Objects, Data Hiding & Encapsulation, Structures, Data members and Member functions, Scope resolution operator and its significance, Static Data Members,
			Static member functions, Nested and Local Class, Accessing Members of Class and Structure.
			Constructor, Initialization using constructor, types of constructor– Default, Parameterized & Copy Constructors,
			Constructor overloading, Default Values to Parameters, Destructors, Console I/O: Hierarchy of Console Stream Classes, Unformatted and Formatted I/O Operations.

				Manipulators, Friend Function, Friend Class, Arrays, Array of Objects, Passing and Returning Objects to Functions, String Handling in C++, Dynamic Memory Management: Pointers, new and delete Operator,
			1st week of March	(I-Assignment)-C++
			March	Array of Pointers to Objects, this Pointer, Passing Parameters to Functions by Reference & pointers. Static Polymorphism: Operators in C++, Precedence and Associativity Rules,
				Operator Overloading, Unary & Binary Operators Overloading, Function Overloading, Inline Functions, Merits/Demerits of Static Polymorphism.
				Introduction: operating system, architecture, functions, characteristics, historical evolution, types: Serial batch, multiprogramming, time sharing, real time, distributed and parallel. OS as resource Manager. Computer system structures: I/O structure, storage structure, storage hierarchy.
				Operating system structure: system components, services, system calls, system programs, system structures. Process management: process concepts, process state, process control block, operations, process scheduling, inter process communication.
			3rd week of March	(II- Assignment)-C++
			4th week of March	(Unit test)-C++
			1st week of April	(I-Assignment)-OS
			1st week of April	(II- Assignment)-OS
			3rd week of April	(Unit test)-OS
			April	CPU Scheduling: scheduling criteria, levels of scheduling, scheduling algorithms, multiple processor scheduling. Deadlocks: Characterization, methods of handling, deadlock detection, prevention, avoidance, recovery.
				Storage Management: memory management of single-user and multiuser operating system, partitioning, swapping, paging and segmentation, virtual memory, Page replacement Algorithms, Thrashing. Process synchronization: critical section problems, semaphores. Mutual exclusion
				Device and file management: Disk scheduling, Disk structure, Disk management, File Systems: Functions of the system, File access and allocation methods, Directory Systems: Structured Organizations, directory and file protection mechanisms.
			May	Revision
	<b>3</b>	<b>Dr. Rahul Hooda</b>	<b>Computer Science</b>	<b>Relational DBMS / Computer Networks</b>
		B.Sc 6th Sem	Feb	Relational Model Concepts, Codd's Rules for Relational Model, Hierarchical Data Model– Introduction, Features, Components, Example, Network Data Model– Introduction, Features, Components, Example, Differences between Hierarchical Data Model and Network Data Model Comparison of Relational Data Model with Hierarchical Data Model and Network Data Model
				Relational Algebra:-Selection and Projection, Set Operation, Join and Division. Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus. Functional Dependencies and Normalization -- Purpose, Data Redundancy,
				Update Anomalies, Partial/Fully Functional Dependencies, Transitive Functional Dependencies, Characteristics of Functional Dependencies, Decomposition and Normal Forms (1NF, 2NF, 3NF & BCNF).
				SQL: Data Definition and data types, Create Table, Insert Data, Viewing Data, Filtering Table Data, Sorting data, Creating Table from a Table, Destroy table, Update, View, Delete, Join, Concatenating data from Table Specifying Constraints in SQL;
			1st week of March	(I-Assignment)-RDBMS
				Primary Key, Foreign Key, Unique Key, Check Constraint, Using Functions PL/SQL-Introduction, Advantages of PL/SQL The Generic PL/SQL Block: PL/SQL Execution Environment;

				PL/SQL Character Set and Data Types, Declaration and Assignment of Variables Control Structure in PL/SQL: Conditional Control, Iterative Control, Sequential Control
			March	Introduction to Data Communication and Computer Networks; Uses of Computer Networks; Types of Computer Networks and their Topologies; Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways;
				Network Software: Network Design issues and Protocols; Connection-Oriented and Connectionless Services; OSI Reference Model; TCP/IP Model; Analog and Digital Communications Concepts: Analog and Digital data and signals; Bandwidth and Data Rate, Capacity, Baud Rate; Guided and Wireless Transmission Media;
			3rd week of March	(II- Assignment)-RDBMS
			4th week of March	(Unit test)-RDBMS
			1st week of April	(I-Assignment)-CN
			1st week of April	(II- Assignment)-CN
			3rd week of April	(Unit test)-CN
			April	Communication Satellites; Switching and Multiplexing; Modems and modulation techniques; Data Link Layer Design issues; Error Detection and Correction methods; Sliding Window Protocols: One-bit, Go Back N and Selective Repeat; Media Access Control: ALOHA, Slotted ALOHA, CSMA, Collision free protocols;
				Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet; Token Ring; Introduction to Wireless LANs and Bluetooth; Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Link State Routing, Hierarchical Routing;
				Congestion Control; Traffic shaping; Choke packets; Load shedding; Application Layer: Introduction to DNS, E-Mail and WWW services; Network Security Issues: Security attacks; Encryption methods; Firewalls; Digital Signatures;
			May	Revision
	<b>4</b>	<b>Dr. Rahul Hooda</b>	<b>Computer Science</b>	<b>C Programming Lab</b>
		B.Sc 2nd Sem	Feb	Program 1
				Program 2
				Program 3
			March	Program 4
				Program 5
				Program 6
			April	Program 7
				Program 8
				Program 9
			May	Program 10
				Practice & Viva
	<b>5</b>	<b>Dr. Rahul Hooda</b>	<b>Computer Science</b>	<b>C++ Programming Lab</b>
		B.Sc 4th Sem	Feb	Program 1
				Program 2
				Program 3
			March	Program 4
				Program 5
				Program 6
				Program 7

			April	Program 8
				Program 9
				Program 10
			May	Practice & Viva
<b>6</b>	<b>Dr. Rahul Hooda</b>	<b>Computer Science</b>		<b>SQL and PL/SQL</b>
	B.Sc 4th Sem		Feb	Program 1
				Program 2
				Program 3
			March	Program 4
				Program 5
				Program 6
				Program 7
			April	Program 8
				Program 9
				Program 10
			May	Practice & Viva
<b>7</b>	<b>Dr. Rahul Hooda</b>	<b>Computer Science</b>		<b>Minor: Word Processing</b>
	B.Sc 2nd Sem		Feb	Introduction to Word Processing, Development of the Word Processor, Design considerations for word processed documents,
				Creating, opening and closing documents, working with multiple documents,
				Saving documents, Save an existing file under another name, Save different Versions
				Formatting Documents, Text Formatting, Paragraph Formatting,
			1st week of March	(I-Assignment)
			March	Text alignment, Tabs and its types, placing text at the tab position, Paragraph spacing,
				Working with lists, Paragraph borders and shading, Creating and Applying Styles
				Adding tables, Adding data to a table, Deleting a table,
				Add and delete columns and rows, Modifying columns and rows,
			April	Images, Inserting images, Modifying images, Resize an image and charts
				Mail Merge, Preparing the documents,
				Creating the main document, Creating the data source,
				Document formatting
			May	Revision
<b>8</b>	<b>Dr. Rahul Hooda</b>	<b>Computer Science</b>		<b>MDC: Digital Tools</b>
	B.A./B.Com 2nd Sem		Feb	Introduction to internet: concept, application and uses of Internet,
				Internet services, search engines, Information Technology and Business:
				concepts of data, information and information system, effects of IT on business
				Types of information system: Transaction Processing System (TPS),
			1st week of March	(I-Assignment)
			March	Management Information System (MIS). Introduction to E-commerce;
				e-commerce and world wide web; e-commerce application services;
				Ecommerce models: B2B, B2C, C2C;
				electronic data interchange: benefits, components of EDI,
			April	EDI implementation.
				Security issues in e-commerce,

			April	M-commerce and e-governance, difference m-commerce and e-commerce
			May	Revision
	<b>9</b>	<b>Dr. Rahul Hooda</b>	<b>Computer Science</b>	<b>SEC: Basic IT Tools</b>
		B.A. 2nd Sem	Feb	Introduction to Computer: Computer and Latest IT gadgets, Evolution of Computers & its applications,
				Basics of Hardware and Software, Application Software, Systems Software, Utility Software. Central Processing Unit,
				Input devices, Output devices, Computer Memory & storage, Mobile Apps.
				Introduction to Operating System, Functions of the Operating system, Operating Systems for Desktop and Laptop, Operating Systems for Mobile Phone and Tablets,
			1st week of March	(I-Assignment)
			March	User Interface for Desktop and Laptop, Task Bar, Icons & shortcuts, Running an Application, Operating System Simple Setting,
				Changing System Date and Time, Changing Display Properties, To Add or Remove Program and Features, Adding, Removing & Sharing Printers, File and Folder Management.
				Introduction to Internet and World Wide Web, Basic of Computer Networks, Local Area Network (LAN), Wide Area Network (WAN),
				Network Topology, Internet, Applications of Internet, Website Address and URL,
			April	Popular Web Browsers (Internet Explorer/Edge, Chrome, Mozilla Firefox, Opera etc.), Popular Search Engines, Searching on the Internet.
				E-mail: Using E-mails, Opening Email account, Mailbox: Inbox and Outbox, Creating and Sending a new E-mail,
				replying to an E-mail message, forwarding an E-mail message, searching emails, Attaching files with email, Email Signature.
				Social Networking: Facebook, Twitter, LinkedIn, Instagram, Instant Messaging(WhatsApp, Facebook Messenger, Telegram), Introduction to Blogs, Digital Locker.
			May	Revision