NAME OF THE FACULTY: Ms. ESHA BANSAL

DATE	CLASS: B.C.A. I SUBJECT: Foundation of Computer Science BCA23-CC102	CLASS: B.C.A. I SUBJECT: Basic IT Tools B23-SEC-103	CLASS: B.C.A. II SUBJECT: Linux and Shell Programming BCA23-CC302	CLASS: BCA I SUBJECT: DISCRETE STRUCTURE (SHARED) BCA23-M101
July 2024	Computer Fundamentals: Evolution of Computers through generations, Characteristics of Computers, Strengths and Limitations of Computers, Classification of Computers, Functional Components of a Computer System	Introduction to Computer: Computer and Latest IT gadgets, Evolution of Computers & its applications,	Introduction to Linux: Linux distributions, Overview of Linux operating system, Linux architecture, Features of Linux,	An introduction to matrices and their types
Aug 2024	Applications of computers in Various Fields. Types of Software: System software, Application software, Utility Software, Shareware, Freeware, Firmware, Free Software. Memory Systems: Concept of bit, byte, word, nibble, storage locations and addresses, measuring units of storage capacity, access time, concept of memory hierarchy. Primary Memory - RAM, ROM, PROM, EPROM. Secondary Memory - Types of storage devices, Magnetic Tape, Hard Disk, Optical Disk, Flash Memory	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, User Interface for Desktop and Laptop,	Accessing Linux system, Starting and shutting down system, Logging in and Logging out, Comparison of Linux with other operating systems. Commands in Linux: General-Purpose commands, File oriented commands, directory oriented commands, Communication-oriented commands, process oriented commands, etc.	Operations on matrices, Symmetric and skew-symmetric matrices, Minors, Co-factors.
Sept 2024	I/O Devices: I/O Ports of a Desk Top Computer, Device Controller, Device Driver. Input Devices: classification and use, keyboard, pointing devices - mouse, touch pad and track ball, joystick, magnetic stripes, scanner, digital camera, and microphone Output Devices: speaker, monitor, printers: classification, laser, ink jet, dot-matrix. Plotter. Introduction to Operating System: Definition, Functions, Features of Operating System, Icon, Folder, File, Start Button, Task Bar, Status Buttons, Folders, Shortcuts, Recycle Bin, Desktop, My Computer, My Documents, Windows Explorer, Control Panel.	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),	Introducing regular expressions. Regular expressions & Filters in Linux: Simple filters viz. more, wc, diff, sort, uniq, grep Linux file system: Linux files, inodes and structure and file system, file system components, standard file system, file system types.	Determinant of a square matrix, Adjoint and inverse of a square matrix, Solutions of a system of linear equations up to order 3.

Oct 2024	The Internet: Introduction to networks and internet, history, Internet, Intranet & Extranet, Working of Internet, Modes of Connecting to Internet. Electronic Mail: Introduction, advantages and disadvantages, User Ids, Passwords, e-mail addresses, message components, message composition, mailer features. Browsers and search engines	Network Topology, Internet, Applications of Internet, Website Address and URL, 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	Processes in Linux: Starting and Stopping Processes, Initialization Processes, Mechanism of process creation, Job control in linux using at, batch, cron & time. Shell Programming: vi editor, shell variables, I/O in shell, control structures, loops, subprograms	Introduction to counting: Basic counting techniques – inclusion and exclusion, pigeon-hole principle
Nov 2024	Threats: Physical & non-physical threats, Virus, Worm, Trojan, Spyware, Keylogers, Rootkits, Adware, Cookies, Phishing, Hacking, Cracking. Computer Security Fundamentals: Confidentiality, Integrity, Authentication, Non-Repudiation, Security Mechanisms, Security Awareness, Security Policy, anti-virus software & Firewalls, backup & recovery.	Creating and Sending a new Email, 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 Facebook Messenger, Introduction to Blogs, Digital Locker.	Creating & executing shell scripts in linux.	Permutation, combination, summations. Introduction to recurrence relation and generating function.

NAME OF THE FACULTY: MS PRIYANKA

DATE	CLASS: BSc I & BA I & BCA I SUBJECT: Logical Organization of Computer	CLASS: BCA I SUBJECT: Problem Solving through C
July - Aug	Number Systems: Binary, Octal, Hexadecimal etc. Conversions from one number system to another, BCD Number System. BCD Codes: Natural Binary Code, Weighted Code, Self-Complimenting Code, Cyclic Code. Error Detecting and Correcting Codes. Character representations: ASCII, EBCDIC and Unicode. Number Representations: Integer numbers - sign-magnitude, 1's & 2's complement representation. Real Numbers normalized floating point representations	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(), putch(), putchar(), puts(). Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment, Conditional Operators and Special Operators Operator Hierarchy;. Arithmetic Expressions, Evaluation of Arithmetic Expression,
Sept	Binary Arithmetic: Binary Addition, Binary Subtraction, Binary Multiplication, Binary Division using 1's and 2's Compliment representations, Addition and subtraction with BCD representations. Boolean Algebra: Boolean Algebra Postulates, basic Boolean Theorems, Boolean Expressions, Boolean Functions, Truth Tables, Canonical Representation of Boolean Expressions: SOP and POS, Simplification of Boolean Expressions using Boolean Postulates & Theorems, Kaurnaugh-Maps (upto four variables), Handling Don't Care conditions	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.
Oct	Logic Gates: Basic Logic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc. Their symbols, truth tables and Boolean expressions. Combinational Circuits: Design Procedures, Half Adder, Full Adder, Half Subtractor, Full Subtracor, Multiplexers, Demultiplexers, Decoder, Encoder, Comparators, Code Converters	Strings: Declaration and Initialization, String I/O, Array of Strings, String Manipulation Functions: String Length, Copy, Compare, Concatenate etc., Search for a Substring. Pointers in C: Declaring and initializing pointers, accessing address and value of variables using pointers; Pointers and Arrays.
Nov	Sequential Circuits: Basic Flip- Flops and their working. Synchronous and Asynchronous Flip –Flops, Triggering of Flip-Flops, Clocked RS, D Type, JK, T type and Master-Slave Flip-Flops. State Table, State Diagram and State Equations.Flip-flops characteristics & Excitation tables.Sequential Circuits: Designing registers –Serial-In Serial-Out (SISO), Serial-In Parallel-Out (SIPO), Parallel-In Serial-Out (PISO) Parallel-In Parallel-Out (PIPO) and shift registers Revision	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. Revision

Course: BCA 3rd semester
Subject: Java OOP Foundations
Faculty Name: Mr. Ashish Kumar
Subject Code: BCA-23-CC301

Month	**Syllabus**
22nd July onwards & August 2024	Object Oriented Programming and Java Fundamentals: Structure of Java programs, Classes and Objects, Data types, Type Casting, Looping Constructs
Sept. 2024	Interfaces: Interface basics; Defining, implementing and extending interfaces; Implementing multiple inheritance using interfaces Packages: Basics of packages, Creating and accessing packages, System packages, Creating user defined packages
Oct.2024	Exception handling using the main keywords of exception handling: try, catch, throw, throws and finally; Nested try, multiple catch statements, creating user defined exceptions. File Handling Byte Stream, Character Stream, File I/O Basics, File Operations
Nov. 2024	AWT and Event Handling: The AWT class hierarchy, Events, Event sources, Event classes, Event Listeners, Relationship between Event sources and Listeners, Delegation event model, Creating GUI applications using AWT.

Course: BCA 3rd semester
Subject: Data Base Technologies
Faculty Name: Mr. Ashish Kumar
Subject Code: BCA-23-CC303

Month	**Syllabus**
22nd July onwards & August 2024	Basic Concepts-Data, Information, Records, Files, Schema and Instance etc. Limitations of File Based Approach, Characteristics of Database Approach, Database Management System (DBMS), DBMS Components & Functions, Database Interfaces, Advantages and Disadvantages of DBMS. Database Users: Data and Database Administrator, Role and Responsibilities of Database Administrator, Database Designers, Application Developers etc.
Sept. 2024	Data Models: Hierarchical, Network and Relational Data Models. Entity-Relationship Model: Entity, Entity Sets, Entity Type, Attributes: Type of Attributes, Keys, Integrity Constraints, Designing of ER Diagram, Symbolic Notations for Designing ER Diagram
Oct.2024	SQL: Meaning, Purpose and Need of SQL, Data Types, SQL Components: DDL, DML, DCL and DQL, Basic Queries, Join Operations and Sub-queries, Views, Specifying Indexes. Constraints and its Implementation in SQL Relational Algebra: Basic Operations: Select, Project, Join, Union, Intersection, Difference, and Cartesian Product etc.
Nov. 2024	Relational Model: Functional Dependency, Characteristics, Inference Rules for Functional Dependency, Types of Functional Dependency, Normalization: Benefits and Need of Normalization, Normal Forms Based on Primary Keys-INF,2NF,3NF.

Course: BCA 5th semester
Subject: Big Data Tools
Faculty Name: Mr. Ashish Kumar
Subject Code: BCA-19-56-1

Month	**Syllabus**
22nd July onwards & August 2024	Types of Digital Data, Introduction to Big Data, Big Data Analytics, Apache Hadoop, Analysing data with UNIX/ LINUX tools, Analysing data with Hadoop, Hadoop Ecosystem
Sept. 2024	The concept and design of Hadoop Distributed File System, Command Line Interface, Data Flow, Data ingest with Floom and Scoop and Hadoop archives, Hadoop I/O: Compression, Serialization, Avro and File Based Data Structure
Oct.2024	Anatomy of MapReduce job run, failures, Job Scheduling, Shuffle and Sort, Task Execution, MapReduce types and formats, MapReduce features. Introduction to PIG, Execution modes of PIG, Comparison of PIG with databases, Grunt, PIG Latin, User Defined Functions, Database Processing Operators
Nov. 2024	Hive Shell, Hive Services, Hive Metastore, Comparison with traditional databases, HiveQL, Tables, Querying data and user defined functions. Hbase concepts, Clients, Hbase versus RDBMS, Introduction to BigSQL.

Course: BA 1st semester
Subject: Basic IT Tools
Faculty Name: Mr. Ashish Kumar
Subject Code: B23-SEC-103

Month	**Syllabus**
August 2024	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.
Sept. 2024	Introduction to Operating System, Functions of the Operating system, Operating Systems for Desktop and Laptop, Operating Systems for Mobile Phone and Tablets, 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.
Oct.2024	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, Popular Web Browsers (Internet Explorer/Edge, Chrome, Mozilla Firefox, Opera etc.), Popular Search Engines, Searching on the Internet.
Nov. 2024	E-mail: Using E-mails, Opening Email account, Mailbox: Inbox and Outbox, Creating and Sending a new Email, 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.

NAME OF THE FACULTY: DR. MONIKA

Month	CLASS: BSC III & BA III SUBJECT: WEB DESIGNING	CLASS: BSC III & BA III SUBJECT: FUNDAMENTALS OF DATA BASE SYSTEM	CLASS: BCA II SUBJECT: ADVANCED IT SKILLS	CLASS: BCA I SUBJECT: DISCRETE STRUCTURE(SHARED)
July- Aug	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web; Basic Features; Web Browsers; Web Servers; Hypertext Transfer Protocol; URLs; Searching and Web-Casting Techniques; Search Engines and Search Tools	Basic Concepts – Data, Information, Records and files. Traditional file Based Approach- Limitations of Traditional File Based Approach, Actors on the Scene - Data and Database Administrator, Database Designers, End users Applications Developers and Workers behind the Scene. Database System Architecture – Three Levels of Architecture, Schemas – External, Conceptual and Internal Level, Database Languages – VDL, DDL, SDL, DML, SQL,	Introduction to Computer: Al based Computers, Evolution of Computers & its applications, Advanced Hardware and Software, importance of AI in Application Software, Systems Software, Utility Software. Graphics Processing Unit, Input devices, Output devices, Computer Memory & storage, Mobile Apps.	Introduction to Statistics: Central Tendency, Mean, Mode, Median, Dispersion; Data Types and Data presentation: Data types: Attributes, Variable, Discrete and Continuous variable
September	Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML Tags; Header, Title, Body, Paragraph, Ordered/Unordered Line, Creating Links; Headers; Text Styles; Text Structuring; Text Colors and Background;	Mappings – External/ Conceptual and Conceptual/Internal, Instances, Data Independence – Logical and Physical Data Independence Data Models: High Level, Low Level and Representational – Records-based Data Models, Object-based Data Models, Physical Data Models and Conceptual Models Entity-Relationship Model – Concepts, Entity Types, Entity Sets, Attributes, Relationships, Constraints, Keys , Degree, Cardinality etc.	Introduction to Operating System: Definition, User oriented functions of the Operating system, Different types of Operating Systems, Advanced features of Operating Systems for Mobile Phone and Tablets, Components of User Interface, Status Bar, Tool bar, Icons and their movement, Using Shortcuts, Control Panel in 0Nrating System, Adding and removing apps on system.	Univariate and Bivariate distribution, Types of Characteristics, Different types of Scales: normal, ordinal, interval, and ratio. Data presentation: Frequency distribution, Histogram, Ogive curves
October	Steps for Developing Website; Choosing the Contents; Home Page; Domain Names; Internet Service Provider; Planning and Designing Web Site; Creating a Website; Web Publishing: Hosting Site; Page layouts; Insertion of Text, Movement of Text	Organization- Inventory System, Payroll System, Reservation System, Online Book Store etc.Classification of Database Management System, Centralized and Client Server architecture	Introduction to Internet: Computer Networks, Network Topologies, Intranet, Features of Internet and Intranet, URL and its components, Web Browsers and their useful tools, A.I based searching tools.	Introduction to Probability, Random Experiment, Random Variable, Random Example, Expected Value, Independent Variables, Dependent Variable,

November	Images: Types of Images, Insertion of Image, Movement of Image, Ordered and Unordered lists; Inserting Graphics; Table Handling Functions like Columns, Rows, Width, Colours; Frame Creation and Layouts; Working with Forms and Menus; Working with Buttons like Radio, Check Box;	Relational Data Model:- Brief History, Terminology in Relational Data Structure, Relations, Properties of Relations ER Diagrams of any Database Keys – Primary, Secondary, Composite, Candidate, Alternate and Foreign Key, Domains, Integrity Constraints over Relations.	E-mail: Definition of E-mails, Advantages and Disadvantages, Various features in Email account, Trash, Spam, Draft, Scheduled e-mails, replying options, Differentiate between sending and forwarding an E-mail, Searching criteria for emails, Limits of size of attaching files with email and their alternatives, Digital Signature.	Bayes Theorem, Mutually Exclusive events, Complementary Events, Geometrical Probability, Probability with or without replacement. Binomial Distribution, Poisson's Distribution, Geometric Distribution

NAME OF THE FACULTY: Dr. Himanshu Garg

DATE	TOPICS TO BE COVERED			
	BCA 5th Sem. SUBJECT:Angular JS	**B.C.A. 5th Sem. SUBJECT: Computer Graphics**	**B.C.A. 3rd Sem. SUBJECT: BASIC CONCEPT OF UML**	**B.A. 1 SUBJECT: BASIC IT TOOLS (SEC)**
July 2024	Need of Angular JS, MVC, Angular Expressions,	Introduction: Survey of Computer Graphics and its applications	System Design: Overview, Estimating Performance, Making a reuse plan	Introduction to Computer: Computer and Latest IT gadgets, Evolution of Computers & its applications,
Aug. 2024	Built in Filters, Using Angular JS Filters, Directives, Directive Lifecycle, Binding Controls to Data, Matching Directives,	Components and working of Interactive Graphics, Display Processors; Graphic Devices: Raster scan and Random Scan displays, Resolution, Aspect Ratio, Refresh CRT, Color CRT monitors, Lookup tables, Plasma Panel and LCD monitors, interlacing, grey shades; Interactive Input Devices: keyboard, mouse, trackball, joystick, light pen, digitizing tablet, image scanners, voice system; Hard Copy Devices: printers, plotters;	Breaking a system into subsystems, Identifying Concurrency, Allocation of subsystem, Management of data storage, Handling global resources.	Basics of Hardware and Software, Application Software, Systems Software, Utility Software. Central Processing Unit, Input devices, Output devices, Computer Memory & storage, Mobile Apps.
Sept 2024	Role of Controller, Controllers and Modules, Nested Controllers, Using Filters in Controllers Introduction to Angular JS Modules, Working with Angular forms, Model Binding Forms, Updating Models with a twist	Drawing Geometry: Coordinate Systems; Output Primitives: symmetrical and simple DDA line drawing algorithm, Bresenham's Line drawing, loading frame buffer; symmetrical DDA for drawing circle, Polynomial method for circle drawing; circle drawing using polar coordinates, Bresenham's circle drawing; generation of ellipse;	Interaction Modeling: Use Case Models: Actors, Use case, Use case diagram, Guidelines for use case diagram.	Introduction to Operating System, Functions of the Operating system, Operating Systems for Desktop and Laptop, Operating Systems for Mobile Phone and Tablets, 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.
Oct 2024	. Scope, Scope Lifecycle, Scope Inheritance, Scope and Controllers, Rootscope, Scope Broadcasting. Dependency Injection, Creating Services, Factory Service and Provider.	2-D Transformations: translation, rotation, scaling, matrix representations and homogeneous coordinates, composite transformations, general pivot point rotation, general fixed point scaling, shearing; reflection about X Axis and Y Axis; Reflection about Straight lines;,	Sequence Model: Scenarios, Sequence Diagrams, Guidelines for Sequence model.	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, Popular Web Browsers (Internet Explorer/Edge, Chrome, Mozilla Firefox, Opera

		Reflection through an Arbitrary Line		etc.), Popular Search Engines, Searching on the Internet.
Nov 2024	SPA, Pros and Cons of SPA, Passing Parameters, Changing Location. ngAnimate module, CSS Transforms.	2-D Viewing: window, viewport; 2-D viewing transformation, zooming, panning; Clipping operations: point and line clipping, Cohen-Sutherland line clipping, mid-point subdivision line clipping, Liang-Barsky line clipping, Sutherland-Hodgman polygon clipping	Activity Model: Activities, Branches, Initiation & Termination, Concurrent Activities,	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), Intro to Blogs, Digital loker

NAME OF THE FACULTY: Sonal Jain

Month	CLASS: BCA II SUBJECT: BASIC CONCEPT OF UML	CLASS: BCA III SUBJECT: CLOUD COMPUTING	CLASS: BCA III SUBJECT: DATA WAREHOUSE	CLASS: BA I SUBJECT: BASIC IT TOOLS (SEC)
July- Aug	Introduction: Object-Orientation, Modeling, Class Modeling: Object, Class.	Introduction, Layers and Types of Cloud. Features of Cloud, Infrastructure as a Service, Platform as a Service, Software as a Service.	Introduction to Data Warehouse, Data Warehouse Delivery Methods. System Process : Typical Process Flow within a Data Warehouse, Extract and Load Process,	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.
September	Value & Attributes, Operation & Method, Link & Association, Qualified association, Multiplicity, Association end name, Ordering, Generalization & inheritance,.	Broad Approaches of Migrating to a Cloud, Seven Step Model of Migration into a Cloud. The Onset of Knowledge Era, Evolution of SaaS, Challenges of SaaS Paradigm, Approaching the SaaS integration Enigma, New Integration Scenarios, Integration Methodologies, SaaS Integration Products and Platforms, SaaS Integration Services, Business to Business Integration Services. Issues of Enterprise Applications on Cloud, Transition Challenges, Enterprise Cloud Technology and Market Evolution, Business Drivers towards marketplace for Enterprise Cloud Computing, Cloud Supply Chain.	Clean and Transform Data, Backup and Archive Process, Query Management Process. Process Architecture: Load Manager, Warehouse Manager, Query Manager, Detailed Information, Summary Information, Metadata, Data Marting Database Schema: Starflake Schema, Snowflake Schema, Fact Constellation Schema, Identifying facts and dimensions, Designing Fact Tables, Designing Dimension Table, Designing various schema, Query Redirection Partitioning Strategy: Horizontal Partitioning, Vertical Partitioning, Hardware Partitioning,	Introduction to Operating System, Functions of the Operating system, Operating Systems for Desktop and Laptop, Operating Systems for Mobile Phone and Tablets, 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.
October	,Class Modeling: Graphical Structure of Object & Class, Association, Aggregation, Abstract Class, Multiple Inheritance, Metadata. State Modeling: Events, States, Transition & Conditions.	Virtual Machine, Provisioning and Manageability, Virtual Machine Migration Services, Anatomy of Cloud Infrastructure, Distributed Management of Virtual Infrastructure, Scheduling Techniques of Advanced Reservation of Capacity, Capacity Management to meet SLA Commitments. Logical Design of Cluster as a Service, Cloud Storage from LAN to WAN, Technologies for Data Security in Cloud.	Sizing the partition. Aggregations: Need of Aggregation, designing summary tables Data Marting: Introduction, Need of Data Mart, Design of Data Mart, Cost of Data Mart. Metadata: Data Transformation and Load, Data management, Query Generation, Metadata and tools. Process Managers: Need of tools to manage data warehouse, system managers, data warehouse process managers, load manager, warehouse manager, query manager.	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, Popular Web Browsers (Internet Explorer/Edge, Chrome, Mozilla Firefox, Opera etc.), Popular Search Engines, Searching on the Internet.

November	State Dinpram. State Diagram. State Modeling: Nested State Diagram, Nested States.	Integration of Private and Public Cloud, Resource Provisioning Service, Hybrid Cloud Implementation, Importance of Quality and Security in Cloud, Business Ready Dynamic Data Centre, Dynamic ICT Services. Workflow Management System and Clouds, Utilizing Clouds for Workflow Execution.	Hardware Architecture: Process, Server Hardware, Network Hardware, Client Hardware. Physical Layout: Parallel Technology, Disk Technology, Database Layout, Filesystems. Backup and Recovery: Backup Strategies, Testing the Strategy, Disaster Recovery. Operating Datawarehouse: Introduction, Day to Day Operations of Data Warehouse, Overnight Processing.	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), Intro to Blogs, Digital loker

NAME OF THE FACULTY: JYOTI

Month	CLASS: BSC (CS) II & BA II SUBJECT: DATA STRUCTURE(MAJOR)	CLASS: BSC NM & MED II SUBJECT: DATA STRUCTURE(MINOR)	CLASS: BCA III SUBJECT: SOFTWARE PROJECT MANAGEMENT	CLASS: BA I SUBJECT: BASIC IT TOOLS (SEC)
July- Aug	Data Structure Definition, Data Type vs. Data Structure, Classification of Data Structures, Data Structure Operations, Applications of Data Structures; Algorithm Specifications: Performance Analysis and Measurement (Time and Space Analysis of Algorithms- Average, Best and Worst Case Analysis.	Data Structure Definition, Data Type vs. Data Structure, Classification of Data Structures, Data Structure Operations, Applications of Data Structures; Algorithm Specifications: Performance Analysis and Measurement (Time and Space Analysis of Algorithms- Average, Best and Worst Case Analysis.	Theoretical foundations for software metrics, Introduction to the measurement theory, Data collection and analysis, Classification of software measures, Application of software metrics Software reliability measures and models, Measuring the software development and maintenance processes, Experimental design and analysis, Software metrics validation, Predication systems	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.
September	Arrays: Introduction, Linear Arrays, Representation of Linear Array In Memory, Two Dimensional and Multidimensional Arrays, Sparse Matrix and its Representation, Operations on Array: Algorithm for Traversal, Selection, Insertion, Deletion and its implementation. String Handling: Storage of Strings, Operations on Strings viz., Length, Concatenation, Substring, Insertion, Deletion. Replacement. Linked List: Introduction, Array vs. linked list, Representation of linked lists in Memory, Traversing a Linked List, Insertion, Deletion, Searching into a Linked list, Type of Linked List.	Arrays: Introduction, Linear Arrays, Representation of Linear Array In Memory, Two Dimensional and Multidimensional Arrays, Sparse Matrix and its Representation, Operations on Array: Algorithm for Traversal, Selection, Insertion, Deletion and its implementation. String Handling: Storage of Strings, Operations on Strings viz., Length, Concatenation, Substring, Insertion, Deletion. Replacement. Linked List: Introduction, Array vs. linked list, Representation of linked lists in Memory, Traversing a Linked List, Insertion, Deletion, Searching into a Linked list, Type of Linked List.	Calibration and validation of prediction systems, Overview of mature software processes and project management, Role of TQM in software project management, cost and effort estimates, Overall and detailed scheduling. Quality management, Defect estimation and prevention, Risk management , logging and tracking defects,	Introduction to Operating System, Functions of the Operating system, Operating Systems for Desktop and Laptop, Operating Systems for Mobile Phone and Tablets, 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.
October	Stack: Array Representation of Stack, Linked List Representation of Stack, Algorithms for Push and Pop, Application of Stack: Polish Notation, Postfix Evaluation Algorithms, Infix to Postfix Conversion, Infix to Prefix Conversion, Recursion	Stack: Array Representation of Stack, Linked List Representation of Stack, Algorithms for Push and Pop, Application of Stack: Polish Notation, Postfix Evaluation Algorithms, Infix to Postfix Conversion, Infix to Prefix Conversion, Recursion	project management plans, configuration management, project reviews for better project execution, Overcoming the Not Around Here (NAH) syndrome. Project tracking (including defect tracking, status reports, milestone analysis),	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, Popular Web Browsers (Internet Explorer/Edge,

				Chrome, Mozilla Firefox, Opera etc.), Popular Search Engines, Searching on the Internet.
November	Introduction to Queues: Simple Queue, Double Queue, Circular Queue, Priority Queue, Representation of Queues as Linked List and Array, Applications of Queue. Algorithm on Insertion and Deletion in Simple Queue and Circular Queue.	Introduction to Queues: Simple Queue, Double Queue, Circular Queue, Priority Queue, Representation of Queues as Linked List and Array, Applications of Queue. Algorithm on Insertion and Deletion in Simple Queue and Circular Queue.	defect analysis and prevention (plus Pareto and causal analysis), Process monitoring and audit, Project closure analysis	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), Intro to Blogs, Digital locker