P.I.G. GOVT. COLLEGE FOR WOMEN, JIND LESSON-PLAN (Session 2021-22) EVEN SEMESTER

Name of Teacher: Esha Bansal
Designation: Assistant Professor
Subject: Computer Science
Class: B.Com. 2nd Semester (E-commerce) BC-204

Subject/ Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Introduction to internet: concept, application and uses of Internet, Internet services. Information Technology and Business: concepts of data PRACTICAL- search engines, communication through Internet.	
2	May	information and information system, effects of IT on business; Types of information system: Transaction Processing System (TPS), Management Information System (MIS). PRACTICAL- Research using online sources – surveys, research on social networking sites.	Group discussion
3	June	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, EDI implementation, security issues in e-commerce PRACTICAL- e-governance initiation such as Edisha, digital locker	Presentation
4	July	M-commerce and e-governance: an overview.	

*Vacation as per university calendar
- 1 assignment and 01 unit test will be taken as per schedule.

Name of Teacher: ESHA BANSAL
Designation: Assistant Professor
Subject: Computer Science
Class: B.Sc Second Year (PAPER I: Object Oriented Programming with C++
PAPER II: Operating System**)**

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks If any,
1	April	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. 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.	
2	May	Process management: process concepts, process state, process control block, operations, process scheduling, inter process communication. CPU Scheduling: scheduling criteria, levels of scheduling, scheduling algorithms, multiple processor scheduling. Deadlocks: Characterization, methods of handling, deadlock detection, prevention, avoidance, recovery. 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.	Presentation

3	June	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	Group discussion
		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, Array of Pointers to Objects, this Pointer, Passing Parameters to Functions by Reference & pointers.	
4	July	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.	Test
		Static Polymorphism: Operators in C++, Precedence and Associativity Rules, Operator Overloading, Unary & Binary Operators Overloading, Function Overloading, Inline Functions, Merits/Demerits of Static Polymorphism.	

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Jyoti
Designation: Assistant Professor
Subject: Programming in C
Class: BSC 2nd sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Overview of C: History & Importance of C, Structure of a C Program. Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables, Assignment statement, Symbolic constant. Input/output: Unformatted & formatted I/O function, Input functions (scanf(), getch(), getche(), getchar(), gets()), output functions (printf(), putch(), putchar(), puts()).	
2	May	Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, conditional operators and special operators. Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion, operator hierarchy & associativity. Decision making & branching: Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement.	Presentation
3	June	Decision making & looping: For, while, and do-while loop, jumps in loops, break, continue statement. Functions: Definition, prototype, passing parameters, recursion, Storage classes in C: auto, extern, register and static storage class, their scope, storage, &lifetime.	
4	July	Arrays: Definition, types, initialization, processing an array. Structure and Union. Test	Group discussion

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Jyoti
Designation: Assistant Professor
Subject: Logical Organization of Computers
Class: BSC 2nd sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Information Representation: Number Systems, Binary Arithmetic, Fixed-point and Floating point representation of numbers, BCD Codes, Error detecting and correcting codes, Character Representation – ASCII, EBCDIC.	
2	May	Binary Logic: Boolean Algebra, Boolean Theorems, Boolean Functions and Truth Tables, Canonical and Standard forms of Boolean functions, Simplification of Boolean Functions – Venn Diagram, Karnaugh Maps. Digital Logic: Basic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc.	Presentation
3	June	Combinational Circuits: Half-Adder, Full-Adder, Half-Subtractor, Full-Subtractor, Encoders, Decoders, Multiplexers, Demultiplexers, Comparators, Code Converters. Sequential Logic: Characteristics, Flip-Flops, Clocked RS, D type, JK, T type and Master-Slave flip-flops. State table, state diagram. Flip-flop excitation tables	
4	July	Shift registers : serial in parallel out and parallel in parallel out.. Designing counters – Asynchronous and Synchronous Binary Counters, Modulo-N Counters and Up-Down Counters Test	Group discussion

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Jyoti
Designation: Assistant Professor
Subject: Logical Organization of Computers
Class: B.A. 2nd sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Information Representation: Number Systems, Binary Arithmetic, Fixed-point and Floating point representation of numbers, BCD Codes, Error detecting and correcting codes, Character Representation – ASCII, EBCDIC.	
2	May	Binary Logic: Boolean Algebra, Boolean Theorems, Boolean Functions and Truth Tables, Canonical and Standard forms of Boolean functions, Simplification of Boolean Functions – Venn Diagram, Karnaugh Maps. Digital Logic: Basic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc.	Presentation
3	June	Combinational Circuits: Half-Adder, Full-Adder, Half-Subtractor, Full-Subtractor, Encoders, Decoders, Multiplexers, Demultiplexers, Comparators, Code Converters. Sequential Logic: Characteristics, Flip-Flops, Clocked RS, D type, JK, T type and Master-Slave flip-flops. State table, state diagram. Flip-flop excitation tables	
4	July	Shift registers: serial in parallel out and parallel in parallel out.. Designing counters – Asynchronous and Synchronous Binary Counters, Modulo-N Counters and Up-Down Counters Test	Group discussion

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Jyoti
Designation: Assistant Professor
Subject: Programming in C
Class: BA 2nd sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Overview of C: History & Importance of C, Structure of a C Program. Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables, Assignment statement, Symbolic constant. Input/output: Unformatted & formatted I/O function, Input functions (scanf(), getch(), getche(), getchar(), gets()), output functions (printf(), putch(), putchar(), puts()).	
2	May	Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, conditional operators and special operators. Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion, operator hierarchy & associativity. Decision making & branching: Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement.	Presentation
3	June	Decision making & looping: For, while, and do-while loop, jumps in loops, break, continue statement. Functions: Definition, prototype, passing parameters, recursion, Storage classes in C: auto, extern, register and static storage class, their scope, storage, & lifetime.	
4	July	Arrays: Definition, types, initialization, processing an array. Structure and Union. Test	Group discussion

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND LESSON-PLAN (Session 2021-22) EVEN SEMESTER

Name of Teacher: Priyanka
Designation: Assistant Professor
Subject: Computer Science
Class: BCA First Year (DBMS)

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Definition of Data Base and Data Base Management System, File System vs. DBMS, Characteristics of the Database Approach, Abstraction and Data Integration, Database users, Advantages and Disadvantages of DBMS, database Systems Concepts and Architecture, Data Models, Schema and Instances, DBMS Architecture, Data Independence, Database Language, DBMS function, Purpose of ER Model, Entity Types, Entity Sets	
2	May	Attributes, Keys, Relationship, Roles and Structural Constraints, E-R Diagrams, Design of an ER Database Schema, Reduction of an ER schema to tables, Relational Data Model and concepts, Integrity Constraints over Relations, Relational Algebra-Basic Operations, SQL Data Definition and Data Types, DDL, DML and DCL	Presentation
3	June	Views and Queries in SQL, Specifying Constraint & Indexes in SQL, RDBMS: ORACLE-Basic Structure, Storage Management in ORACLE Database Structure & implementation in ORACLE, Programing ORACLE Application, Conventional Data Models: Network & Hierarchical Data models	
4	July	RDBMS: Functional Dependencies, Decomposition, Normal forms based on primary keys-(1NF,2NF, 3NF, BCNF), Multi-valued Dependencies, 4NF,Join dependencies, 5NF, Transaction Processing Concepts: Introduction to Transaction , Properties of Transaction, Transaction Processing System Concepts, Schedules and Recoverability, Serialzability of Schedules	Group Discussion

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Priyanka
Designation: Assistant Professor
Subject: Computer Science
Class: BCA First Year (Software Engg.)

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	**Introduction to Software Engineering:** Software crisis, Software engineering Approach and Challenges, Software development process models: Waterfall, Rapid prototyping, Time boxing and Spiral Models, Comparison of models. **Requirement Analysis:** Software Requirements, Problem Analysis, Requirement Specification: characteristics, components and structure of SRS document, functional and non functional requirements, Functional specification with use cases.	
2	May	**Planning a Software Project:** Process Planning, Effort Estimation: uncertainties in effort estimation, building effort estimation models, COCOMO model, Project Scheduling and Staffing, Software configuration management plan, Quality Plan, Risk Management, Project Monitoring Plan **Designing a Software Project:** Function Oriented Design: Design Principles, Module level concepts, design notations and specification, Structured design methodology.	Presentation
3	June	Object-oriented design: OO Analysis and Design, OO concepts, Coupling, cohesion, Unified modeling language(UML), Detailed Design and PDL, verification and validation, Cyclomatic complexity. **Coding and Testing:** Common coding errors, Coding Process	
4	July	Refactoring, Verification, Metrics, Testing: Error, Fault and Failures, Test cases and test criteria, Black Box testing, White Box testing, Testing Process, Reliability estimation Metrics, Types of Maintenance	Group Discussion

*Vacation as per university calendar
  • 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Priyanka
Designation: Assistant Professor
Subject: Computer Science
Class: BCA Second Year (Artificial Intelligence)

Subject/ Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Introduction: Background, Overview of AI applications, The predicate calculus: Syntax and semantic for propositional logic and FOPL, Clausal form, inference rules, resolution and Unification, Knowledge representation: Network representation through Associative network & conceptual graphs, Structured representation- Frames & Scripts.	
2	May	Search strategies: Strategies for state space search-data driven and goal driven search; Search algorithms- uninformed search (Depth first search, Breadth first search) and informed search (Hill climbing, Best first, A* algorithm, mini-max), computational complexity, Properties of search algorithms (Admissibility, Monotonicity, Optimality, Dominance), Production system: Definition, Types of production system (Commutative, Non-commutative, Decomposable, Non-decomposable), Control of search in production systems. Expert System: Definition, Concept, Types of expert system, Rule based expert system: Architecture, Development	Presentation
3	June	Managing uncertainty in expert systems - Bayesian probability theory, Stanford certainty factor algebra, Non-monotonic logic and reasoning with beliefs, Fuzzy logic, Dempster/Shaffer and other approaches to uncertainty, Knowledge acquisition: Definition of Knowledge, Types of learning (Learning by automata, Genetic algorithms, Intelligent editors, Learning by induction).	
4	July	Natural Language Processing (NLP): Problems in understanding natural languages, Different stages of language analysis, Chomsky Hierarchy of formal languages, Transition network parsers (TNP), Augmented Transition Network Parsers (ATNP).	Group Discussion

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Ashish Kumar
Designation: Assistant Professor
Subject: Programming in Core Java
Class: BCA – 3rd year

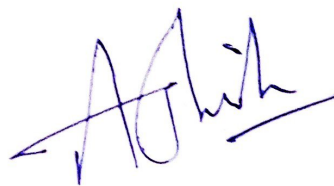| Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Basic principles of object oriented programming, introduction to Java, History and features of java, java virtual machine, java's magic bytecode, the java run time environment, basic language elements, lexical tokens, identifiers, keywords, literals, comments, primitive data types, operators, assignments, input/output in java, basic i/o classes, reading console input, control structure in java, decision and loop control statements.	Presentation
2	May	Class and object in Java: defining class in java, creating objects of a class, defining methods, arguments passing mechanism, using class and objects, constructors, nested class, inner class, abstract class, dealing with static members, array and string in java, defining an array, initializing and accessing array, multi dimensional array, defining string, operation in array and string, creating strings using string class, creating strings using string buffer class, polymorphism in java, basic concept, types, overriding vs overloading, implementation.	
3	June	Extending classes and inheritance in java, benefits of inheritance, types of inheritance in java access attributes, inheriting data members and methods, roles of constructors in inheritance, use od super, packages and interfaces, basic concepts of package and interface, organizing classes and interfaces in packages, defining package, adding classes from a package to your program, classpath setting for packages, import package, naming convention for packages, access protection in packages, standard packages.	Group Discussion
4	July	Exception handling in java, the idea behind exception, types of exception, use of try, catch, finally, throw, throws in exception handling, inbuilt and user defined exception, checked and unchecked exception, catching more than one exception, applet in java, applet basics, applet architecture, applet life	

		cycle, applet tag, parameters to applet, embedding applets in web page, creating simple applets, GUI programming, designing graphical user interfaces in java components and containers, using containers, layout managers, AWT components, AWT classes, AWT controls.	

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND LESSON-PLAN (Session 2021-22) EVEN SEMESTER

Name of Teacher: Ashish Kumar
Designation: Assistant Professor
Subject: Client Side Scripting
Class: BCA – 2ⁿᵈ year

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Introduction to scripting: overview of Java Script, advantages, client side java Script, capturing user input, writing JavaScript into HTML Basic JavaScript Techniques: Data types, literals, variables and operators, Java Script arrays, dense array, operators, expressions	
2	May	Java Script Programming Construct: Assignment, data declaration, if, switch, while, for, do while, label, break, Continue, function call, return, with, delete, method invocation. JavaScript Functions: Types of functions in Java Script-Built in functions, User defined functions, function declaration, passing parameters, variable scope, return values, recursive functions.	Presentation
3	June	Dialog boxes: Alert dialog box, prompt dialog box, confirm dialog box, window objects JavaScript Document Object Model: Understanding JDOM Forms: Form object, properties and methods , elements: text, password, button, submit, reset, checkbox, Radio, Text Area, select & option, Other built-in Object-String object, math object, date object	Group Discussion
4	July	User defined objects: creation, instances, and objects within objects Cookies: Concept of cookies, setting a cookie, supply values to cookies. Errors and Debugging: Error, Error Handling and Debugging	

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Ashish Kumar
Designation: Assistant Professor
Subject: E-Commerce
Class: B.Com. (B) 2nd Semester

Subject/ Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Introduction to internet: concept, application and uses of Internet, Internet services. Information Technology and Business: concepts of data PRACTICAL- search engines, communication through Internet.	
2	May	information and information system, effects of IT on business; Types of information system: Transaction Processing System (TPS), Management Information System (MIS). PRACTICAL- Research using online sources – surveys, research on social networking sites.	Group discussion
3	June	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, EDI implementation, security issues in e-commerce PRACTICAL- e-governance initiation such as Edisha, digital locker	Presentation
4	July	M-commerce and e-governance: an overview.	

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND

LESSON-PLAN (Session 2019-20) EVEN SEMESTER

Name of Teacher: Dr. Monika
Designation: Assistant Professor
Subject: Paper-II: Computer Networks
Class: B.Sc. 6th Semester

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	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;	
2	May	Analog and Digital Communications Concepts: Analog and Digital data and signals; Bandwidth and Data Rate, Capacity, Baud Rate; Guided and Wireless Transmission Media; Communication Satellites; Switching and Multiplexing; Modems and modulation techniques;	Group discussion
3	June	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;	Presentatio
4	July	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;	

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Dr. Monika
Designation: Assistant Professor
Subject: E-Commerce
Class: B.Com. (C) 2nd Semester

Subject/ Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Introduction to internet: concept, application and uses of Internet, Internet services. Information Technology and Business: concepts of data PRACTICAL- search engines, communication through Internet.	
2	May	information and information system, effects of IT on business; Types of information system: Transaction Processing System (TPS), Management Information System (MIS). PRACTICAL- Research using online sources – surveys, research on social networking sites.	Group discussion
3	June	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, EDI implementation, security issues in e-commerce PRACTICAL- e-governance initiation such as Edisha, digital locker	Presentation
4	July	M-commerce and e-governance: an overview.	

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND LESSON-PLAN (Session 2021-22) EVEN SEMESTER

Name of Teacher: Dr. Monika
Designation: Assistant Professor
Subject: E-Commerce
Class: B.Com. (C) 2nd Semester

Subject/ Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Introduction to internet: concept, application and uses of Internet, Internet services. Information Technology and Business: concepts of data PRACTICAL- search engines, communication through Internet.	
2	May	information and information system, effects of IT on business; Types of information system: Transaction Processing System (TPS), Management Information System (MIS). PRACTICAL- Research using online sources – surveys, research on social networking sites.	Group discussion
3	June	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, EDI implementation, security issues in e-commerce PRACTICAL- e-governance initiation such as Edisha, digital locker	Presentation
4	July	M-commerce and e-governance: an overview.	

Name of Teacher: **Dr. Monika**
Designation: **Assistant Professor**
Subject: **Paper-I: Relational Data Base Management System**
Class: **B.Sc. 6th Semester**

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	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 SQL: Data Definition and data types, Create Table, Insert Data, Viewing Data, Filtering Table Data, Sorting data,	
2	May	Relational Algebra:-Selection and Projection, Set operation, Join and Division. Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus Creating Table from a Table, Destroy table, Update, View, Delete, Join, Concatenating data from Table Specifying Constraints in SQL; Primary Key, Foreign Key, Unique Key, Check Constraint, Using Functions	Group discussion
3	June	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). PL/SQL-Introduction, Advantages of PL/SQL The Generic PL/SQL Block: PL/SQL Execution Environment;	Presentation
4	July	PL/SQL Character Set and Data Types, Declaration and Assignment of Variables Control Structure in PL/SQL: Conditional Control, Iterative Control, Sequential Control	

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2021-22) EVEN SEMESTER

Name of Teacher: Dr. Himanshu Garg
Designation: Assistant Professor
Subject: Data Structure using C
Class: BCA – 2nd Sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	**Arrays and Strings:** Array definition and its types, declaration & Initialization of one dimensional and two-dimensional array, Pointer to Array, String definition, reading and writing strings, string handling functions. Linear Search, Binary Search, Bubble Sort, Selection Sort, Insertion Sort, Merge Sort	Class Test
2	May	**Stacks and Queues :** Representation of Stacks, Stack Operations, Applications of Stacks, Queues, Dequeue, Circular Queue, Operation on Queues, Application of Queues. **Linked List** : Introduction, Types, Operations (Insertion, Deletion, Traversal, Searching, Sorting), Applications, Dynamic Memory Management, Implementation of Linked Representation.	Class Test
3	June	**Trees:** Definition and Basic Terminologies, Representation of Tree, Types of Tree, Binary Tree, Representation of Binary Tree, Tree Traversals, Creation of tree from traversals, Threaded Binary Tree, Binary Search Tree, Operations on Binary Search Tree, Conversion of General Tree to Binary Tree.	Group Discussion & Class Test
4	July	**Graph** : Definitions and Basic Terminologies, Matrix Representation of Graph, Walks, Traits, Paths, Circuit, Connectivity, Components, Operations on Graph, Labelled Graph, Homomorphism, Isomorphism, , Reachability, Depth First Search, Breadth First Search, Single Pair Shortest Path, All Pair Shortest Path.	Unit Test

*Vacation as per university calendar

• 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Dr. Himanshu Garg
Designation: Assistant Professor
Subject: Computer Networks
Class: BCA 4th Sem

Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Introduction to Computer Networks and its uses, Network categorization and Hardware: Broadcast and point-to-point networks, LAN, MAN, WAN, Internetworks, Topologies, Wireless networks, Network Software: Protocols, Services, network architecture, design issues, OSI Reference model,	Class Test
2	May	TCP/IP Reference model, Introduction to Example Networks: Internet, Connection-Oriented Networks – X.25, Frame Relay, ATM Data Communication Model, Digital and Analog data and signals, Bit rate, Baud, Bandwidth, Guided Transmission Media : Twisted Pair, Coaxial cable, Optical fiber; Wireless transmission : Radio waves, microwaves, infrared waves; satellite communication. Switching: Circuit Switching, Packet Switching; Multiplexing: Frequency Division Multiplexing Time Division Multiplexing	Assignment-1 & Class Test
3	June	Data Link Layer Design issues: Framing, error control, Flow Control, Error Detection and correction; Elementary Data Link Protocols, Sliding Window Protocols; Medium Access Control: Aloha, CSMA protocols, Collision free protocols, Limited Contention Protocols; Wavelength division Multiple access protocol, Wireless LAN Protocol: MACA; IEEE 802.3 Ethernet, IEEE 802.4 Token Bus; IEEE 802.5 Token ring, Digital Cellular, Radio: GSM, CDMA, FDDI	Group Discussion & Assignment-2 & Class Test
4	July	Network Layer, Design issues, Virtual Circuit and Datagram Subnet, Routing Algorithms, Optimality principle, Shortest path Routing, Flooding , Distance Vector Routing, Link State Routing, Hierarchical Routing, Broadcast and Multi Cast Routing, Routing for Mobile hosts, Routing in Adhoc Networks, Leaky bucket token bucket, choke packets, Load Shedding.	Unit Test

*Vacation as per university calendar

• 2 assignments and 01 unit test will be taken as per schedule.

07/04/22

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2021-22) EVEN SEMESTER

Name of Teacher: Dr. Himanshu Garg
Designation: Assistant Professor
Subject: Computer Organization
Class: BCA – 2nd Sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Computer Arithmetic: Hardware implementation and algorithms for addition and subtraction with signed-magnitude data, signed 2's complement data, multiplication for signed-magnitude data	Class Test
2	May	Booth multiplication algorithm, array multiplier, division for signed magnitude data, divide overflow. Hardware implementation and algorithms for floating point addition, subtraction, multiplication and division.	Assignment-1 & Class Test
3	June	CPU Organization: Processor organization, Machine instructions, instruction cycles, instruction formats and addressing modes, microprogramming concepts, and micro program sequencer.	Group Discussion & Assignment-2 & Class Test
4	July	Control Design: Hardwired Control – classical method, one-hot method; Microprogrammed Control – basic concepts and structure of a microprogrammed control unit, horizontal versus vertical microinstruction formats, microinstruction addressing.	Unit Test

*Vacation as per university calendar
* Half Syllabus assigned so 1 assignment and half unit test will be taken as per schedule.

07/04/22

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND LESSON-PLAN (Session 2021-22) EVEN SEMESTER

Name of Teacher: **Dr. Sonal Jain**
Designation: **Assistant Professor**
Subject: **E-Commerce**
Class: **B.Com. (C) 2nd Semester**

Subject/ Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Introduction to internet: concept, application and uses of Internet, Internet services. Information Technology and Business: concepts of data PRACTICAL- search engines, communication through Internet.	
2	May	information and information system, effects of IT on business; Types of information system: Transaction Processing System (TPS), Management Information System (MIS). PRACTICAL- Research using online sources – surveys, research on social networking sites.	Group discussion
3	June	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, EDI implementation, security issues in e-commerce PRACTICAL- e-governance initiation such as Edisha, digital locker	
4	July	M-commerce and e-governance: an overview.	

*Vacation as per university calendar

- 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Dr. Sonal Jain
Designation: Assistant Professor
Subject: Simulation & Modeling
Class: B.C.A. 2nd Semester

Subject/ Paper: Sr. No.	Months	Topics to be covered	Remarks if any;
1	April	System and System Environment, Components of a System, Discrete and Continuous System, Models of System and Types of Models, Discrete Event System Simulation, Advantages and Disadvantages of Simulation, Areas of Applications.	
2	May	Techniques of Simulation: Properties of Random Numbers, Techniques of Generating Random Numbers, Pseudo Random Numbers, Monte Carlo Method, Types of System Simulation, Real Time Simulation, Stochastic Variables, Discrete Probability Functions.	Group discussion
3	June	Useful Statistical Models, Discrete Distributions, Continuous Distributions, Poisson's Process, Empirical Distributions	
4	July	Queuing Models: Characteristics of Queuing Systems, Queuing Notations, Measure of Performance of Queuing Systems, Steady State Behavior of Infinite Population Markovian Model.	

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: Dr. Sonal Jain
Designation: Assistant Professor
Subject: Simulation & Modeling
Class: B.C.A. 2nd Semester

Subject/ Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	System and System Environment, Components of a System, Discrete and Continuous System, Models of System and Types of Models, Discrete Event System Simulation, Advantages and Disadvantages of Simulation, Areas of Applications.	
2	May	Techniques of Simulation: Properties of Random Numbers, Techniques of Generating Random Numbers, Pseudo Random Numbers, Monte Carlo Method, Types of System Simulation, Real Time Simulation, Stochastic Variables, Discrete Probability Functions.	Group discussion
3	June	Useful Statistical Models, Discrete Distributions, Continuous Distributions, Poisson's Process, Empirical Distributions	
4	July	Queuing Models: Characteristics of Queuing Systems, Queuing Notations, Measure of Performance of Queuing Systems, Steady State Behavior of Infinite Population Markovian Model.	

*Vacation as per university calendar
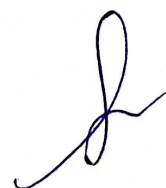- 2 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: **Dr. Sonal Jain**
Designation: **Assistant Professor**
Subject: **Internet Technologies**
Class: **B.C.A. 4ᵗʰ Semester**

Subject/ Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Introduction to ASP.NET: .NET Framework(CLR,CLI,BCL), ASP.NET Basics, ASP.NET Page Structure, Page Life Cycle. Controls: HTML Server Controls, Web Server Controls, Web User Controls ,Validation Controls, Custom Web Controls.	
2	May	State Management: View State, Control State, Hidden Fields, Cookies, Query Strings, Application State, Session State, Profile Properties, Master Pages, Themes, Site Navigation. Security and User Authentication: Basic Security Guidelines, Securing ASP.NET Applications, ASP.NET Memberships and Roles	Group discussion
3	June	Introduction to ADO.NET, Data Binding, Importing the SQL Client Namespace, Defining the Database Connection, Managing Content Using Grid View and Details View	
4	July	Working with Files and Email: Writing and Reading Text Files, Uploading Files, Sending Email with ASP.NET. Introduction to Web Services, Ajax, Silverlight	

*Vacation as per university calendar
2 assignments and 01 unit test will be taken as per schedule

Name of Teacher: JYOTI
Designation: Extension Lecturer
Subject: Discrete Mathematics
Class: B.C.A. 2nd Semester

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	Set Theory: Basic Set Theory, operations on Sets, Algebra of sets, venn Diagrams. Relations: Binary Relations, Complement of relations, Inverse of Relations, Composite relations, properties, Equivalence, Partial Order and Total order relations. Functions: Functions on Set, Domain, Co-domain, Representation of Functions, Types, Identity and Inverse Functions, Composition of Functions, Applications	
2	May	Graphs: Introduction, Terminology, Types of Graphs, Representation of Graphs, paths and Circuits, Cutset and Cut - Vertices, Graph Isomorphism, Homomorphism, Connectivity, Bipartite Graphs, Subgraphs, Operations on Graphs, Euler and Hamiltonian Paths, Shortest Path Problem, Planar & Dual Graphs, Coloring Covering and Partitioning. Tree: Tree Notations, Properties of tree, Types of Tree, Minimum Spanning Tree (MST).	Group discussion
3	June	Advanced counting Techniques: Recurrence Relations, Solving Recurrence Algorithms and Recurrence Relations, Solution of Recurrence Relations Function. Latices and boolean algebra: Lattices, Hasse Diagram, Principle of Duality, Types of Lattices, Special Lattices, Boolean Expression, Equivalent circuits, Dual, Normal Forms.	
4	July	Propositional Calculus: Propositional logic, Equivalences, Predicates, Quantifiers, Nested quantifiers, Rules of Inference, Normal Forms, Proofs: Methods, strategy.Counting: Pigeonhole Principle, Inclusion-Exclusion Principle, Permutations and Combinations,Binomial Coefficients, Counting Principles, Applications. Advanced counting Techniques: Recurrence Relations, Solving Recurrence Algorithms and Recurrence Relations, Solution of Recurrence Relations, Function.	

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2019-20) EVEN SEMESTER

- Name of Teacher: JYOTI
- Designation: Extension Lecturer
- Subject: Computer Science
- Class: B.A Second Year (PAPER I: Object Oriented Programming with C++
  PAPER II: Operating System)

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	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. 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.	
2	May	Process management: process concepts, process state, process control block, operations, process scheduling, inter process communication. CPU Scheduling: scheduling criteria, levels of scheduling, scheduling algorithms, multiple processor scheduling. Deadlocks: Characterization, methods of handling, deadlock detection, prevention, avoidance, recovery. 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.	

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2020-21) EVEN SEMESTER

3	June	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	Group discussion
		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, Array of Pointers to Objects, this Pointer, Passing Parameters to Functions by Reference & pointers.	
4	July	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.	Test
		Static Polymorphism: Operators in C++, Precedence and Associativity Rules, Operator Overloading, Unary & Binary Operators Overloading, Function Overloading, Inline Functions, Merits/Demerits of Static Polymorphism.	

*Vacation as per university calendar
- 1 assignments and 01 unit test will be taken as per schedule.

Name of Teacher: JYOTI
Designation: Extension Lecturer
Subject: Paper-I: Relational Data Base Management System
Class: B.A. 6th Semester

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	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 SQL: Data Definition and data types, Create Table, Insert Data, Viewing Data, Filtering Table Data, Sorting data,	
2	May	Relational Algebra:-Selection and Projection, Set peration, Join and Division. Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus Creating Table from a Table, Destroy table, Update, View, Delete, Join, Concatenating data from Table Specifying Constraints in SQL; Primary Key, Foreign Key, Unique Key, Check Constraint, Using Functions	Group discussion
3	June	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). PL/SQL-Introduction, Advantages of PL/SQL The Generic PL/SQL Block: PL/SQL Execution Environment;	
4	July	PL/SQL Character Set and Data Types, Declaration and Assignment of Variables Control Structure in PL/SQL: Conditional Control, Iterative Control, Sequential Control	

*Vacation as per university calendar

- 2 assignments and 01 unit test will be taken as per schedule.

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2019-20) EVEN SEMESTER

Name of Teacher: JYOTI
Designation: Extension Lecturer
Subject: Paper-II: Computer Networks
Class: B.A. 6th Semester

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	April	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;	
2	May	Analog and Digital Communications Concepts: Analog and Digital data and signals; Bandwidth and Data Rate, Capacity, Baud Rate; Guided and Wireless Transmission Media; Communication Satellites; Switching and Multiplexing; Modems and modulation techniques;	Group discussion
3	June	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;	
4	July	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;	

*Vacation as per university calendar
- 2 assignments and 01 unit test will be taken as per schedule.