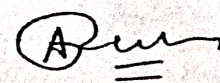


Class: BCA. Sem.- 4th

**LESSON PLAN (Even Semester) Session 2023-24**

**Subject: BCA- 45 Management Information System**

Name of Assistant / Associate Professor	Period	Topics to be covered	Topic of Assignments / Tests to be given to the students
Anil Kumar	01-Jan to 15-Jan	Introduction to system and Basic System Concepts, Types of Systems, The Systems Approach, Information System: Definition & Characteristics, Types of information	
	16-Jan to 31 Jan	Role of Information in Decision-Making, Sub-Systems of an Information system: EDP and MIS management levels, EDP/MIS/DSS.	Assignment-I
	01-Feb to 15-Feb	An overview of Management Information System: Definition & Characteristics, Components of MIS	
	16-Feb to 29-Feb	Frame Work for Understanding MIS: Information requirements & Levels of Management, Simon's Model of decision-Making, Structured Vs Un-structured decisions	
	01-March to 15-March	Formal vs. Informal systems., Developing Information Systems: Analysis & Design of Information Systems	Assignment-II
	16-March to 31-March	Implementation & Evaluation, Pitfalls in MIS Development, Functional MIS: A Study of Personnel	
	01-April to 15-April	Financial and production MIS, Introduction to e-business systems, ecommerce – technologies, applications	Test
	16-April to 30-April	Decision support systems – support systems for planning, control and decision-making	

  
Anil Kumar



# LESSON PLAN (Even Semester) Session 2023-24

Class : BCA 2<sup>nd</sup> Sem.

Subject: BCA – 22 (DATA STRUCTURE)

Name of Assistant Professor	Period	Topics to be covered	Topic of Assignments / Tests
Er. Ram Gopal	1-Jan to 15-Jan	<b>Unit-I</b> Introduction to Data Structures, Data Types, Built in and User Defined Data Structures, Applications of Data Structure, Algorithm Analysis, Worst, Best and Average Case Analysis, Notations of Space and Time Complexity,	
	16-Jan to 31-Jan	Basics of Recursion. Arrays, One Dimensional Arrays, Two Dimensional Arrays and Multi-Dimensional Arrays, Sparse Matrices, Searching from array using Linear and Binary Searching Algorithm, Sorting of array using Selection, Insertion, Bubble, Radix Algorithm	
	1- Feb to 14 – Feb	<b>Unit-II</b> Stacks: Definition, Implementation of Stacks and Its Operations, Evaluation of Infix, prefix and Postfix Expression, Inter-conversion of Infix, Prefix and Post-Fix Expression, Implementation of Merge Sort and Quick Sort Algorithm.	
	14- Feb to 29 – Feb	Queues: Definition, Sequential Implementation of Linear Queues and Its Operations, Circular Queue and Its Implementation, Priority Queues and Its Implementation, Applications of queues.	
	01-Mar to 22-Mar	<b>Unit-III</b> Linked Lists: Need of Dynamic Data Structures, Single Link List and Its Dynamic Implementation, Traversing, Insertion, Deletion Operations on Single Link Lists. Comparison between Static and Dynamic, Implementation of Linked List. Circular Link Lists and Doubly Link List, Dynamic Implementation of Primitive Operations on Doubly Linked Lists and Circular Link List. Dynamic Implementation of Stacks and Queues.	
	01-April to 15-April	<b>Unit-IV</b> Trees: Definition, Basic Terminology, Binary Tree, External and Internal Nodes, Static and Dynamic Implementation of a Binary Tree, Primitive Operations on Binary Trees, Binary Tree Traversals: Pre-Order, In-Order and Post-Order Traversals. Representation of Infix, Post-Fix and Prefix Expressions using Trees. Introduction to Binary Search Trees. Graphs: Basic Terminology, Definition	
	16 April to- 30 April	Graphs: Basic Terminology, Definition of Undirected and Directed Graphs, Memory Representation of Graphs, Minimum-Spanning Trees, Warshal Algorithm, Graph Traversals Algorithms: Breadth First and Depth First.	

*Ram Gopal*  
23/12/2023



# LESSON PLAN (Even Semester) Session 2023-24

Class : BCA 4<sup>th</sup> Sem.

Subject: BCA-44 (PROGRAMMING LANGUAGES)

Name of Assistant Professor	Period	Topics to be covered	Topic of Assignments / Tests
Er. Ram Gopal	1-Jan to 15-Jan	<b>Unit-I</b> <b>The Art of Language Design:</b> The Programming Language Spectrum, Why Study Programming Languages, Compilation and Interpretation, Programming,	
	16-Jan to 31-Jan	An Overview of Compilation- Lexical and Syntax Analysis, Semantic Analysis and Intermediate Code Generation, Target Code Generation, Code Improvement.	
	1- Feb to 14 – Feb	<b>Unit-II</b> <b>Programming Language Syntax:</b> Specifying Syntax: Regular Expressions and Context-Free Grammars- Tokens and Regular, Context-Free Grammars, Derivations and Parse Trees. Scanning- Generating a Finite Automaton, Scanner Code, Table-Driven Scanning, Lexical Errors, Pragmas.	
	14- Feb to 29 – Feb	Parsing- Recursive Descent, Table-Driven Top-Down Parsing, Bottom-Up Parsing, Syntax Errors. Theoretical Foundations- Finite Automata, Push-Down Automata, Grammar and Language Classes.	
	01-Mar to 22-Mar	<b>Unit-III</b> <b>The Notion of Binding Time,</b> Object Lifetime and Storage Management-Static Allocation, Stack-Based Allocation, Heap-Based Allocation, Garbage Collection. Scope Rules-Static Scoping, Nested Subroutines, Declaration Order, Modules, Module Types and Classes, Dynamic Scoping. Implementing Scope-Symbol Tables, Association Lists and Central Reference Table, The Meaning of Names within a Scope- Aliases, Overloading, Polymorphism and Related Concepts. Binding of Referencing Environments- Subroutine Closures, First-Class Values and Unlimited Extent, Object Closures. Macro Expansion.	
	01-April to 15-April	<b>Unit-IV</b> <b>Semantic Analysis-</b> The Role of the Semantic Analyzer, Attribute Grammars, Evaluating Attributes,	
	16 April to- 30 April	Action Routines, Space Management for Attributes-Bottom-Up Evaluation, Top-Down Evaluation, Decorating a Syntax Tree.	

*Revised*  
23/12/2023

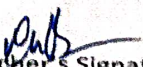


# LESSON PLAN (Even Semester) Session 2023-24

Class : BCA - II<sup>nd</sup> Sem

Subject: Comp. Organization  
BCA-23

Name of Assistant Professor	Period	Topics to be covered	Assignments/ Test
RAJBIR RAUR (Guest Lecturer)  PAB	1 Jan to 15 Jan	Sequential Logic - characteristics flip, flops, clocked RS, D type, JK, T type and Master-slave flip-flops. State table, state diagram and state equations.	
	16 Jan to 31 Jan	flip-flop excitation tables, Sequential circuits :- SISO, SIPO, PISO, PIPO Shift registers.	
	1 Feb to 15 Feb	Designing circuits - Asynchronous and Synchronous, Binary Counters	1st Test Sequential Logic
	16 Feb to 29 Feb	Modulo - N Counters and up-down Counters. Memory & I/O Devices Memory Parameters, Semiconductor	Ass - 1 Sequential Logic
	1 March to 15 March	RAM, ROM, Magnetic & optical storage devices. Flash memory I/O devices and their controllers	
	16 March to 31 March	Memory hierarchies, memory interleaving, problems of write of memory hierarchies, operation of virtual memory	1st - 2 Memory
	1st April to 15 April	Associative memories, cache memory Instruction Design & I/O organization Machine Instruction, Instruction set selection	
	16 April till Exam	Instruction cycle, Ins. format and addressing modes. I/O Program Interface, Interrupt structure, channels, direct control & DMA transfer, Hochman's Top	

  
Teacher's Signature



## LESSON PLAN (Even Semester) Session 2023-24

Class : BCA 6<sup>th</sup> Sem.

Subject: BCA-63 ( INFORMATION SECURITY)

Name of Assistant Professor	Period	Topics to be covered	Topic of Assignments / Tests
Er. Ram Gopal	1-Jan to 15-Jan	<b>Unit-I</b> Introduction to Information Security: Security Goals, Attacks, Types of Attacks, Security	
	16-Jan to 31-Jan	Services and Mechanisms, Wireless Networks and Security: Components of wireless networks, Security issues in wireless	
	1- Feb to 14 – Feb	<b>Unit-II</b> Asymmetric and symmetric Key Cryptography The Data Encryption Standard, The AES Encryption Algorithms, Public Key Encryptions, Uses of Encryption Elementary Cryptography:	
	14- Feb to 29 – Feb	Substitution Ciphers, Transpositions, Making “Good” Encryption algorithms, Secure Architecture of an open System. DES and RSA Algorithm <b>Unit-III</b> Network and System Security: Security at the Application Layer	
	01-Mar to 22-Mar	e-mail security, PGP and S/MIME. Security at the Transport Layer: Secure Socket Layer (SSL) and Transport Layer Security (TLS).	
	01-April to 15-April	<b>Unit-IV</b> Security at the Network Layer: IP Security. System Security: Malicious Software	
	16 April to- 30 April	Malicious Programs, Viruses, Worms, Malware, Firewalls.	

*Ram*  
23/12/2023



**LESSON PLAN (Even Semester) Session 2023-24**

Class : BCA - II<sup>nd</sup> Sem

Subject: *Comp. Organization*  
*BCA - 23*

Name of Assistant Professor	Period	Topics to be covered	Assignments/ Test
RAJBIR KADUR (Guest Lecturer)  <i>RAJBIR</i>	1 Jan to 15 Jan	Sequential Logic - characteristics f.lip, flops, clocked RS, D type, JK, T type and Master-slave flip-flops state table, state diagram and state equations.	
	16 Jan to 31 Jan	flip-flop excitation tables, Sequential circuits :- SISO, SIPO, PISO, PIPO Shift registers.	
	1 Feb to 15 Feb	Designing circuits - Asynchronous and Synchronous, Binary Counters	1 <sup>st</sup> Test Sequential Logic
	16 Feb to 29 Feb	Modulo - N Counters and up-down Counters. Memory & I/O Devices Memory Parameters, Semiconductor	Ass - 1 Sequential Logic
	1 March to 15 March	RAM, ROM, Magnetic & optical Storage devices. Flash memory I/O Devices and their controllers	
	16 March to 31 March	Memory hierarchies, memory interleaving, problems of mgt of Memory hierarchies, operation of virtual memory	Ass - 2 Memory
	1 <sup>st</sup> April to 15 April	Associative memories, Cache memory Instruction Design & I/O organization Machine Instruction, Instruction set selection	
	16 April till Exam	Instruction cycle, Ins. format and addressing modes. I/O Program Interface, Interrupt structure. Programmable Interrupt Controller, DMA transfer, Direct I/O	


*RAJBIR*  
Teacher's Signature



# LESSON PLAN (Even Semester) Session 2023-24

Class : BCA - IV Sem

Subject: Comp. Graphics  
BCA - 43

Name of Assistant Professor	Period	Topics to be covered	Assignments/ Test
RAJBIR KAU (Guest Lecturer) 	1st Jan to 15 Jan	Computer Graphics History, applications Display devices, frame Buffer Video Controller, Display process Look up table RGB Color Model	
	16 Jan to 31 Jan	Color CRT Monitors, Random Scan Displays. Flat panel Display LCD, Plasma panel, Graphic Primitives line Drawing Algorithms	
	1st Feb to 15 Feb	DPA Algorithm, Bresenham's Algo. Diff. Line style, Circle, Ellipse	1 Test Intro graphics
	16th Feb to 29th Feb	Scaling, Translation, Matrix Arbitrary Point, Reflection, Shearing, Co-ordinate transformation Inverse transformation	1st Assign Graphics Co-ordinate Rep.
	1st March to 15th March	Affine trans. Raster. Composite trans. fixed point scaling. Input techniques, Pointing, Positioning Rubber band method	2nd Assign Scaling
	16 March to 31 March	Dragging, Window to Viewport Coordinate trans. Zooming, Panning Clipping, Point clipping, Line clipping, Cohen-Sutherland line clipping	
	1st April to 15 April	Mid point subdivision line clipping Polygon Clipping - Sutherland Hodgeman Polygon Clipping	
16 April till exam		Text Clipping - Graphics in three Dimensions. Displays in three Dimensions 3-D rendering three view to 2-Buffer painter Algo.	

  
Teacher's Signature



OFFICE OF THE PRINCIPAL I.G.GOV.T.COLLEGE,TOHANA

LESSON PLAN

Name of Teacher ..... RAJBIR Kaur .....

Department/Subject ..... BC Computer Science .....

Class ..... BCA - VI<sup>th</sup> ..... Sem ..... 2<sup>nd</sup> ..... Subject ..... Cloud Computing ..... Section .....

S.No.	Date	Topics
	1 <sup>st</sup> Jan to 15 Jan	Recent trends in computing Cloud Computing fundamentals
	16 <sup>th</sup> Jan to 31 Jan	Cloud Services - types, soft. platform, Infrastructure to com. services
1 <sup>st</sup> Test Cloud	1 Feb 15 Feb	Cloud method - characteristics, measured service, model, security in Public
2 <sup>nd</sup> Test Cloud	16 Feb 29 Feb	Cloud Public versus Private clouds cloud infrastructure Self Service
	1 <sup>st</sup> March 15 March	Cloud mgt. Resiliency, provisioning Asset mgt, cloud Governance
	16 March 31 March	High availability & Disaster Recovery
2 <sup>nd</sup> Assign Cloud mgt	1 <sup>st</sup> April 15 April	Charging model, Usage Reporting Billing and Metering
	16 April till Exam	Basics of Virtualization, types Implementation level, structures tools and mechanisms, CPU, memory
		I/O Devices Virtual clusters and Resources mgt, Virtualization for Data Center Automation

  
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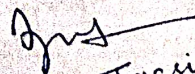


### LESSON PLAN (Even Semester) Session 2023-24

Class : BCA Sem- 2<sup>nd</sup>

Subject: BCA – 24 OPERATING SYSTEM

Name of Assistant Professor	Period	Topics to be covered	Topic of Assignments / Tests to be given to the students		
Dr. Jagsir Singh	1 <sup>st</sup> Jan to 15 <sup>th</sup> Jan 2024.	Introduction, What is an Operating System, Simple Batch Systems, Multi-programmed Batches systems, Time-Sharing Systems, Personal-computer systems, Parallel systems, Distributed Systems, Real-Time Systems	Assignment-1	Test	Presentation/Quiz
	16 <sup>th</sup> Jan to 30 <sup>th</sup> Jan	Memory Management: Background, Logical versus Physical Address space, swapping, Contiguous allocation, Paging, Segmentation Virtual Memory: Demand Paging, Page Replacement, Page-replacement Algorithms, Performance of Demand Paging, Allocation of Frames, Thrashing, Other Considerations			
	31 <sup>st</sup> Jan to 15 <sup>th</sup> Feb	Processes: Process Concept, Process Scheduling, Operation on Processes CPU Scheduling: Basic Concepts, Scheduling Criteria, Scheduling Algorithms,			
	16 <sup>th</sup> Feb to 27 <sup>th</sup> Feb	Scheduling Algorithms, Multiple Processor Scheduling, Process Synchronization: Background, The Critical-Section Problem, Synchronization Hardware, Semaphores, Classical Problems of Synchronization			
	28 <sup>th</sup> Feb to 10 <sup>th</sup> March	Deadlocks: System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock Device Management: Techniques for Device Management, Dedicated Devices, Shared Devices, Virtual Devices; Input or Output Devices,	Assignment-2		
	11 <sup>th</sup> March to 22 <sup>nd</sup> March	Storage Devices, Buffering, Secondary Storage Structure: Disk Structure, Disk Scheduling, Disk Management, Swap-Space Management, Disk Reliability. Information Management: Introduction, A Simple File System, General Model of a File System, Symbolic			
	1 <sup>th</sup> April to 15 <sup>th</sup> April	File System, Basic File System, Access Control Verification, Logical File System, Physical File System File-System Interface: File Concept, Access Methods, Directory Structure, Protection, Consistency Semantics File-System Implementation: File System Structure,			
	16 <sup>th</sup> April to 30 <sup>th</sup> April 2024	Revision			

  
 (Dr. Jagsir Singh)  
 Asstt. Prof. Computer science



# LESSON PLAN (Even Semester) Session 2023-24

Class : BCA. Sem- 4<sup>th</sup> Subject: Core Java

Name of Assistant Professor	Period	Topics to be covered	Topic of Assignments / Tests to be given to the students		
Dr. Jagsir Singh	1 <sup>st</sup> Jan to 15 <sup>th</sup> Jan 2024.	<b>Introduction to Java.</b> Features of java - JDK Environment & tools like(java, javac, appletviewer, javadoc, jdb), Object Oriented Programming Concept- Overview of Programming, Paradigm, Classes, Abstraction, Encapsulation, Inheritance, Polymorphism	Assignment-1	Test	Presentation/Quiz
	16 <sup>th</sup> Jan to 30 <sup>th</sup> Jan	<b>Difference between C++ and JAVA</b> Java <b>Programming Fundamental-</b> Structure of java program, Data types, Variables, Operators, Keywords, Naming Convention, Decision Making (if, switch), Looping(for, while), Type Casting			
	31 <sup>st</sup> Jan to 15 <sup>th</sup> Feb	<b>Classes and Objects</b> -Creating Classes and objects, Memory allocation for objects, Constructor, Implementation of Inheritance, Simple Multilevel Hierarchical, Implementation of Polymorphism, Method Overloading, Method			
	16 <sup>th</sup> Feb to 27 <sup>th</sup> Feb	<b>Arrays, String and Vector</b> -Arrays : Creating an array, Types of Array - One Dimensional arrays, Two Dimensional array. String - ,String Methods, String Buffer class, Vectors, Wrapper classes,			
	28 <sup>th</sup> Feb to 10 <sup>th</sup> March	<b>Abstract Class</b> , Interface and Packages, Modifiers and Access Control, Default, public private protected, Abstract classes and methods, Interfaces, Packages-Packages Concept, Creating	Assignment-2		
	11 <sup>th</sup> March to 22 <sup>nd</sup> March	<b>Exception Handling-</b> Exception types, Using try catch and Multiple catch, Nested try, throw , throws and finally,Creating User defined Exceptions			
	1 <sup>th</sup> April to 15 <sup>th</sup> April	<b>File Handling-</b> Byte Stream, character stream, file IO Basics, File Operations -Creating file,Reading file, Writing File.			
	16 <sup>th</sup> April to 30 <sup>th</sup> April 2024	Revision			

*Jgs*  
( Dr Jagsir Singh )



# LESSON PLAN (Even Semester) Session 2023-24

Class : BCA Sem- 6<sup>th</sup>

Subject: BCA –Python

Name of Assistant Professor	Period	Topics to be covered	Topic of Assignments / Tests to be given to the students		
Dr. Jagsir Singh	1 <sup>st</sup> Jan to 15 <sup>th</sup> Jan 2024.	Introduction Installing and Working With Python, Tokens, Operators, Data Types, Sequence Types, Mapping Types: Dictionaries, Tuples.	Assignment-1	Test	Presentation/Quiz
	16 <sup>th</sup> Jan to 30 <sup>th</sup> Jan	Control Structures: Conditional Branching, Looping, Custom Functions, Strings.			
	31 <sup>st</sup> Jan to 15 <sup>th</sup> Feb	Sequences, iteration and recursion. Modules And Packages Modules And Packages,			
	16 <sup>th</sup> Feb to 27 <sup>th</sup> Feb	Overview Of Python Standard Library OOPS Concepts and Classes In Python, Constructor, deconstructor, inheritance, polymorphism,			
	28 <sup>th</sup> Feb to 10 <sup>th</sup> March	Exception handling: catching and raising exceptions, custom exceptions,	Assignment-2		
	11 <sup>th</sup> March to 22 <sup>nd</sup> March	Database programming.Numpy basics: Introduction, data types,			
	1 <sup>st</sup> April to 15 <sup>th</sup> April	Arrays: indexing, slicing, shape, iteration, join, split, search, sort, filter.			
	16 <sup>th</sup> April to 30 <sup>th</sup> April 2024	Revision			

*Jagsir Singh*  
( Dr. Jagsir Singh )



# LESSON PLAN (Even Semester) Session 2023-24

Class : BCA 4<sup>th</sup> Sem.

Subject: BCA -42 ( ASP .NET)

Name of Assistant Professor	Period	Topics to be covered	Topic of Assignments / Tests
Dr. Surender Kumar	1-Jan to 15-Jan	<b>Unit-I</b> Introduction to .Net Framework: Microsoft .net Platform, Design Goals and Overview, .net architecture.	
	16-Jan to 31-Jan	Console, environment, IL, JIT, .NET framework class library, Common language runtime, CLR Execution, common type system, common language specification, managed and unmanaged code.	Assignment I
	1- Feb to 14- Feb	<b>Unit-II</b> Introduction to ASP.Net : Features, ASP. NET Language Structure – Page Structure – Page event.	Test I
	14- Feb to 29- Feb	Properties & Compiler Directives. ASP.NET Controls: Using HTML Controls, Using Web Controls, Using Validation controls.	Assignment II
	01-Mar to 22-Mar	<b>Unit-III</b> File Handling: Working with Directories and Files, Read and write file, Using File Upload Control, Transfer of File to a Folder.	Test II
	01-April to 15-April	Restricting the type and size of the Files <b>Unit-IV</b> Database Access: Error Handling, Database Access - Using ADO.NET, Connection Command.	
	16 April to till Exam.	DataAdapter, and DataSet, DataReader, Connection Pooling. Revision of all Syllabus.	

*Signature*  
23/11/2023



# LESSON PLAN (Even Semester) Session 2023-24

Class : BCA 6<sup>th</sup> Sem.

Subject: BCA-62 (Internet of Things)

Name of Assistant Professor	Period	Topics to be covered	Topic of Assignments / Tests
Dr. Surender Kumar	1-Jan to 15-Jan	<b>Unit-I</b> Definition and Need of IoT, Characteristics of IoT, Physical Design of IoT – IoT Protocols, Logical Design of IoT, IoT Enabled Technologies – Wireless Sensor Networks,	
	16-Jan to 31-Jan	Cloud Computing, Big Data Analytics, Communication Protocols, Embedded Systems, IoT Levels and Templates.	Assignment I
	1- Feb to 14 – Feb	<b>Unit-II</b> Types of IOTs. M2M Applications, Software Defined Networks, Network Function Virtualization. Need for IoT System Management,	Test-I
	14- Feb to 29 – Feb	Simple Network Management Protocol, Network Operator Requirements.	Assignment II
		<b>Unit-III</b> IOT Devices: Building blocks, exemplary	
	01-Mar to 22-Mar	device: Raspberry PI Interfaces. Other IOT devices. Introduction to WAMP, Django, SkyNet	Test-II
	01-April to 15-April	<b>Unit-IV</b> Introduction to Apache Hadoop, Map reduce programming model,	
	16 April to till Exam.	Hadoop Yarn, Apache Oozie, Apache Spark, Apache Strom. Revision of all syllabus	

*Signature*  
23/12/2023



# LESSON PLAN (Even Semester) Session 2023-24

Class : BCA 2nd Sem.

Subject: BCA-25 SYSTEM ANALYSIS AND DESIGN

Name of Assistant Professor	Period	Topics to be covered	Topic of Assignments / Tests
Dr. Surender Kumar	1-Jan to 15-Jan	<b>Unit-I</b> Introduction to System, Difference between Manual System and Automated System,	
	16-Jan to 31-Jan	Types of Systems, System Analyst, System Development Life Cycle.	Assignment I
	1- Feb to 14 - Feb	<b>Unit-II</b> Data Flow Diagrams (DFD), Data Dictionary, Pseudocode, The Process of System Design, Difference between Logical Design and Physical Design, Top-Down	Test-I
	15- Feb to 29 - Feb	Functional Decomposition, FormsDriven Methodology.	Assignment II
	01-Mar to 22-Mar	<b>Unit-III</b> The Major Development Activities in Structured Design Elements of Design, Introduction to File Organization, Data Base Design, Objectives of Data Base Design, The Role of DBA.	Test-II
	01-April to 15-April	<b>Unit-IV</b> System Testing, Need for System Testing, Testing Strategies, Quality Assurance	
	16 April to till Exam.	Implementation. Maintenance and its categories. Revision of all syllabus	

*Signature*  
23/12/2023