# 1.1 Curricular Planning and Implementation

## 1.1.1 The Institution ensures effective curriculum delivery through a well planned and documented process

**Response:**

The curriculum refers to the lessons, chapters and academic content to be taught to a learner in the college. In empirical terms, it may be regarded as the sum total of a planned set of educational experiences provided to a learner by our college. It encompasses general objectives of learning, courses of study, subject-wise instructional objectives and content, pedagogical practices and assessment guidelines. The college emphasizes on providing quality education and ensures effective curriculum delivery. The institute pursues the curriculum provided by the affiliating university i.e MDU, Rohtak and aims at holistic development of students. Faculty members from the college have been nominated as members of Board of Studies and worked in curriculum forming committees of the university. The curriculum taught inculcates human values in students and sensitizes them towards environmental and gender issues. The institution ensures effective curriculum delivery through a well-planned system.

### ACADEMIC CALENDER

- It is provided by the affiliating university at the commencement of every session.
- The college streamlines its academic process by preparing its own schedule of activities accordingly.

### ASSESSMENT OF ATTAINMENT OF LEARNING OBJECTIVES

- Formative assessment is done to assess the level of learning of the students.
- Extra classes are conducted for slow learners.
- Students prepare assignments and give presentations.
- Internal assessment is done on the basis of tests, ppt presentations, assignments and attendance.
- Final assessment is done through university examinations.

### EXTRA CURRICULAR ACTIVITIES

- Seminars and Extension Lectures for students.
- Awareness regarding health and hygiene for girl students.
- **Diwali Mela, Falguni Utsav, Mehendi Competition** etc. are organized for overall development of students.
- **Quiz, declamation, debate** etc. are organized for improving the vocational skills of students.
- Various sports activities are organized for building comradeship and leadership qualities among students.
- **Annual Prize Distribution and Convocation** are organized for the motivation and encouragement of students.
- **Earn While You Learn** program for the financial aid and upliftment of students.
- **Tree plantation** is organized for campus beautification and carbon negative campaign.

- **Traffic and Nature Interpretation Centre** organized awareness campaign regarding the same.
- **Yoga Day** is celebrated on 21 June every year**.**
- **Constitution Day** is celebrated on 26 November every year.
- **Memorandum Days** including Republic Day (26 January), Martyrdom Day (23 March), Independence Day (15 August), Haryana Heroes' Martyrdom Day (23 September) are celebrated every year.

## SOIL SAMPLING

- B.Sc Final Year students has analyzed thousands of soil samples of village Sisar Khas in Chemistry Lab.

## LIBRARY

- The college has a well-maintained library with adequate number of books.
- Students get books issued on the days assigned to their respective classes.
- Ample number of magazines and daily newspapers are available for the students to peruse.
- Record is maintained by the library.

## LESSON PLAN

- Faculty members prepare lesson plans for their respective subjects to ensure effective delivery of the curriculum.

## LABORATORIES

- The college maintains well-equipped laboratories to cater to the needs of the students.
- Practical exams are conducted and students prepare manuals.
- Field work and Project Work are also conducted by different departments.

## MENTOR-MENTEE SYSTEM

- Small group of students is allotted to individual faculty members.
- Various academic and other issues are addressed and resolved through these sessions.

## TEACHING AIDS

- Besides the traditional chalk and board, the faculty members also use charts, maps, models, etc.
- Quiz, Group-Discussions, Educational Field Trips and Excursions are also organized.
- Role-play and case studies focus on the practical application of knowledge.
- Smart boards and PPTs are used to deliver lectures.
- To tackle the situation actuated by Covid-19 the faculty members made sure the continuity of teaching-learning process through online platforms like Google Meet, WhatsApp, Youtube, etc. Students were also provided with e-content.

## TIME-TABLE COMMITTEE

- The Time-Table committee prepares the over-all time-table of the college,

- All the departments make their own time-tables as well which are duly displayed on college website and notice boards.

## TEACHER SUPPORT

- The college assures faculty development by encouraging the members to participate in orientation, refresher programs and workshops.
- Faculty members also participate in workshops related to curriculum development.

## FEEDBACK

- The college takes feedback from students, parents and faculty members.
- The college assesses its performance and improves in requisite areas after analyzing the feedback.

Hence, the institute makes every effort to groom the students thus empowering and capacitating them to deal with the challenging future.

# Lesson Plan

## Session 2022-23

**Name of Assistant/Associate Professor:-Mrs. SOPHIA**

**Class:- BCA-I(1ˢᵗ Semester)**

**Subject:- BCA-104 :: Logical Organization of Computer-I**

| Month : SEPTEMBER | |
|---|---|
| **Week** | **Topic covered** |
| **Week 2** | Introduction to content of paper and its application. Introduction to computer and its various components. |
| **Week 3** | **UNIT-1:** Information Representation: Number Systems. |
| **Week 4** | Binary Arithmetic, Fixed-point and Floating point representation of numbers. |
| **Week 5** | BCD Codes, Error detecting and correcting codes. |
| **Month : OCTOBER** | |
| **Week** | **Topic covered** |
| **Week 1** | Character Representation – ASCII, EBCDIC, Unicode. |
| **Week 2** | Queries of Unit-1. Revision of Unit-1. Assignment Submission & Written Test of Unit-1. |
| **Week 3** | **UNIT-2:** Binary Logic: Boolean Algebra, Boolean Theorems, Boolean Functions and Truth Tables. |
| **Week 4** | Canonical and Standard forms of Boolean functions, Simplification of Boolean Functions. |
| **Week 5** | Simplification of Boolean Functions – Venn Diagram, Karnaugh Maps. Queries of Unit-2. Revision of Unit-2. Assignment Submission and Test of Unit-2. |
| **Month : NOVEMBER** | |
| **Week** | **Topic covered** |
| **Week 1** | **UNIT-3:** Digital Logic: Introduction to digital signals, Basic Gates – AND, OR, NOT, Universal Gates and their implementation – NAND, NOR, Other Gates – XOR, XNOR etc. NAND, NOR. |
| **Week 2** | AND-OR-INVERT and OR-AND-INVERT implementations of digital circuits, Combinational Logic – Characteristics, Design Procedures, analysis procedures, Multilevel NAND and NOR circuits. Queries of Unit-3. Revision of Unit-3. Assignment Submission and Test of Unit-3. |
| **Week 3** | **UNIT-4:** Combinational Circuits: Half-Adder, Full-Adder, Half-Subtractor, Full-Subtractor, Parallel binary adder/subtractor, Encoders, Decoders. |
| **Week 4** | Multiplexers, Demultiplexers, Comparators, Code Converters, BCD to Seven-Segment Decoder. Queries of Unit-4. Revision of Unit-4. Assignment Submission and Test of Unit-4. |
| **Month : DECEMBER** | |
| **Week** | **Topic covered** |
| **Week 1** | Thorough Revision of Unit-1 & 2 including queries, problem solving and written tests. |
| **Week 2** | Thorough Revision of Unit-3 & 4 including queries, problem solving and written tests. |

# Lesson Plan

## Session 2022-23

**Name of Assistant/Associate Professor:-Mrs. SOPHIA**

**Class:- BCA-II(3rd Semester)**

**Subject:- BCA-202 :: Data Structure-I**

| Month : SEPTEMBER | |
|---|---|
| **Week** | **Topic covered** |
| **Week 2** | Introduction to content of paper and its application. Introduction to computer and its various components. |
| **Week 3** | **UNIT-1:** Introduction: Elementary data organization, Data Structure definition, Data type vs. data structure. |
| **Week 4** | Categories of data structures, Data structure operations, Applications of data structures. |
| **Week 5** | Algorithms complexity and time-space tradeoff, Big-O notataion, Strings: Introduction. |

| Month : OCTOBER | |
|---|---|
| **Week** | **Topic covered** |
| **Week 1** | Storing strings, String operations, Pattern matching algorithms. |
| **Week 2** | Queries of Unit-1. Revision of Unit-1. Assignment Submission & Written Test of Unit-1. |
| **Week 3** | **UNIT-2:** Arrays: Introduction, Linear arrays, Representation of linear array in memory, address calculations, Traversal, Insertions, Deletion in an array, Multidimensional arrays, Parallel arrays, Sparse arrays. |
| **Week 4** | Linked List: Introduction, Array vs. linked list, Representation of linked lists in memory, Traversal, Insertion, Deletion, Searching in a linked list, Header linked list, Circular linked list, Two-way linked list, Threaded lists, Garbage collection, Applications of linked lists. |
| **Week 5** | Queries of Unit-2. Revision of Unit-2. Assignment Submission and Test of Unit-2. |

| Month : NOVEMBER | |
|---|---|
| **Week** | **Topic covered** |
| **Week 1** | **UNIT-3:** Stack: Introduction, Array and linked representation of stacks, Operations on stacks, Applications of stacks: Polish notation, Recursion. |
| **Week 2** | Queues: Introduction, Array and linked representation of queues, Operations on queues, Deques, Priority Queues, Applications of queues. Queries of Unit-3. Revision of Unit-3. Assignment Submission and Test of Unit-3. |
| **Week 3** | **UNIT-4:** Tree: Introduction, Definition, Representing Binary tree in memory, Traversing binary trees, Traversal algorithms using stacks. |
| **Week 4** | Graph: Introduction, Graph theory terminology, Sequential and linked representation of graphs. Queries of Unit-4. Revision of Unit-4. Assignment Submission and Test of Unit-4. |

| Month : DECEMBER | |
|---|---|
| **Week** | **Topic covered** |
| **Week 1** | Thorough Revision of Unit-1 & 2 including queries, problem solving and written tests. |
| **Week 2** | Thorough Revision of Unit-3 & 4 including queries, problem solving and written tests. |

# Lesson Plan

## Session 2022-23

**Name of Assistant/Associate Professor:-Mrs. SOPHIA**

**Class:- BCA-III(5th Semester)**

**Subject:- BCA-301 :: MANAGEMENT INFORMATION SYSTEM**

| Month : SEPTEMBER | |
|---|---|
| **Week** | **Topic covered** |
| **Week 2** | Introduction to content of paper and its application. Introduction to computer and its various components. |
| **Week 3** | **UNIT-1:** Introduction to system and Basic System Concepts, Types of Systems, The Systems Approach, Information System. |
| **Week 4** | Information System: Definition & Characteristics. Types of information, Role of Information in Decision-Making. |
| **Week 5** | Sub-Systems of an Information system, Information System: Definition & Characteristics. |
| **Month : OCTOBER** | |
| **Week** | **Topic covered** |
| **Week 1** | Types of information, Role of Information in Decision-Making, Sub-Systems of an Information system. |
| **Week 2** | Queries of Unit-1. Revision of Unit-1. Assignment Submission & Written Test of Unit-1. |
| **Week 3** | **UNIT-2:** An overview of Management Information System: Definition & Characteristics, Components of MIS. Introduction of Frame Work for Understanding MIS. |
| **Week 4** | Frame Work for Understanding MIS: Information requirements & Levels of Management, Simon's Model of decision-Making. |
| **Week 5** | Structured Vs Un-structured decisions, Formal vs. Informal systems. Queries of Unit-2. Revision of Unit-2. Assignment Submission and Test of Unit-2. |
| **Month : NOVEMBER** | |
| **Week** | **Topic covered** |
| **Week 1** | **UNIT-3:** Developing Information Systems: Analysis & Design of Information Systems, Analysis of Information Systems |
| **Week 2** | Design of Information Systems: Implementation & Evaluation, Pitfalls in MIS Development. Queries of Unit-3. Revision of Unit-3. Assignment Submission and Test of Unit-3. |
| **Week 3** | **UNIT-4:** Functional MIS: A Study of Personnel, Financial and production MIS, Introduction to e-business systems, ecommerce – technologies and applications. |
| **Week 4** | Decision support systems – support systems for planning, control and decision-making. Queries of Unit-4. Revision of Unit-4. Assignment Submission and Test of Unit-4. |
| **Month : DECEMBER** | |
| **Week** | **Topic covered** |
| **Week 1** | Thorough Revision of Unit-1 & 2 including queries, problem solving and written tests. |
| **Week 2** | Thorough Revision of Unit-3 & 4 including queries, problem solving and written tests. |

# Lesson Plan

## Session 2022-23

**Name of Assistant/Associate Professor:-Mrs. SOPHIA**

**Class:- BCA-III(5th Semester)**

**Subject:- BCA-302 :: COMPUTER GRAPHICS**

| Month : SEPTEMBER | |
|---|---|
| **Week** | **Topic covered** |
| **Week 2** | Introduction to content of paper and its application. Introduction to computer and its various components. |
| **Week 3** | **UNIT-1:** Graphics Primitives: Introduction to computer graphics, Basics of Graphics systems, Application areas of Computer Graphics. |
| **Week 4** | Overview of graphics systems, video-display devices, and raster-scan systems, Random scan systems, graphics monitors and workstations and input devices. |
| **Week 5** | Output Primitives: Points and lines, line drawing algorithms, mid-point circle and ellipse algorithms. |

| Month : OCTOBER | |
|---|---|
| **Week** | **Topic covered** |
| **Week 1** | Filled area primitives: Scan line polygon fill algorithm, boundary fill and flood fill algorithms. |
| **Week 2** | Queries of Unit-1. Revision of Unit-1. Assignment Submission & Written Test of Unit-1. |
| **Week 3** | **UNIT-2:** 2-D Geometrical Transforms: Translation, scaling, rotation, reflection and shear transformations, matrix representations and homogeneous coordinates. |
| **Week 4** | Composite transforms, transformations between coordinate systems. 2-D Viewing: The viewing pipeline, viewing coordinate reference frame. Sutherland –Hodgeman polygon clipping algorithm. |
| **Week 5** | Queries of Unit-2. Revision of Unit-2. Assignment Submission and Test of Unit-2. |

| Month : NOVEMBER | |
|---|---|
| **Week** | **Topic covered** |
| **Week 1** | **UNIT-3:** 3-D Object Representation: Polygon surfaces, Quadric surfaces, spline representation, Hermite curve, Bezier curve and B-Spline curves. |
| **Week 2** | Bezier and B-Spline surfaces. Basic illumination models, polygon-rendering methods. Queries of Unit-3. Revision of Unit-3. Assignment Submission and Test of Unit-3. |
| **Week 3** | **UNIT-4:** 3-D Geometric Transformations: Translation, rotation, Scaling, reflection and shear transformations, composite transformations. |
| **Week 4** | 3-D Viewing: Viewing pipeline, viewing coordinates, view volume and general projection transforms and clipping. Queries of Unit-4. Revision of Unit-4. Assignment Submission and Test of Unit-4. |

| Month : DECEMBER | |
|---|---|
| **Week** | **Topic covered** |
| **Week 1** | Thorough Revision of Unit-1 & 2 including queries, problem solving and written tests. |
| **Week 2** | Thorough Revision of Unit-3 & 4 including queries, problem solving and written tests. |

# Lesson Plan

## Session 2022-23

**Name of Assistant/Associate Professor:-Mrs. SOPHIA**

**Class:- B.Sc(Maths Hons.)-I(1st Semester)**

**Subject:- BHM-116 :: Computer Fundamentals and MS-OFFICE**

| Month : SEPTEMBER | |
|---|---|
| **Week** | **Topic covered** |
| **Week 2** | Introduction to content of paper and its application. Introduction to computer and its various components. |
| **Week 3** | **UNIT-1:** Fundamentals of Computer: Model of a digital computer, Functioning of a digital computer, Historical evolution of computers, Classification of computers. |
| **Week 4** | Human Being vs Computer, Input/Output Devices, Storage devices, Memory and mass storage devices, characterstics of memory systems. |
| **Week 5** | Types of memory, RAM, ROM, concepts of Virtual and Cache memory, Types of Software, Application and System Software and its functions. |
| Month : OCTOBER | |
| **Week** | **Topic covered** |
| **Week 1** | Time sharing, multiprocessing, Application of Computer. |
| **Week 2** | Queries of Unit-1. Revision of Unit-1. Assignment Submission & Written Test of Unit-1. |
| **Week 3** | **UNIT-2:** Introduction to Windows: Types of windows, windows as an operating system, windows explorer, using clipboard, using paint brush, control panel, installing a printer. |
| **Week 4** | MS Power Point: Introduction, Power point slide creation, Slide-show, Adding graphics, Formatting, Customizing and Printing. |
| **Week 5** | Queries of Unit-2. Revision of Unit-2. Assignment Submission and Test of Unit-2. |
| Month : NOVEMBER | |
| **Week** | **Topic covered** |
| **Week 1** | **UNIT-3:** MS-Word: Introduction to MS-Word, Standard Toolbar, Word Wrap, Text formatting, Indents, Tabs, Formatting paragraphs. |
| **Week 2** | Applying animation to text. Queries of Unit-3. Revision of Unit-3. Assignment Submission and Test of Unit-3. |
| **Week 3** | **UNIT-4:** MS Excel: Introduction to MS Excel, Working with Toolbars, Formatting, Formulas, Data management. |
| **Week 4** | Graphs and Charts, Macros and other additional functions. Queries of Unit-4. Revision of Unit-4. Assignment Submission and Test of Unit-4. |
| Month : DECEMBER | |
| **Week** | **Topic covered** |
| **Week 1** | Thorough Revision of Unit-1 & 2 including queries, problem solving and written tests. |
| **Week 2** | Thorough Revision of Unit-3 & 4 including queries, problem solving and written tests. |

**Name of Extension Lecturer:** Dr Ruman Rani

**Class:** B Sc (NM)-1st Year    **Semester :** IInd    **Subject:** Inorganic Chemistry + Organic Chemistry

| Month | Week | Topic |
|---|---|---|
| Jan | 3rd | Nomenclature of alkenes, mechanisms of dehydration of alcohols and dehydrohalogenation of alkyl halides,. |
| | 4th | The Saytzeff rule, Hofmann elimination, physical properties and relative stabilities of alkenes. |
| Feb. | 1st | Chemical reactions of alkenes mechanisms involved in hydrogenation. electrophilic and free radical additions, Markownikoff's rule |
| | 2nd | hydroboration-oxidation, oxymercurationreduction. ozonolysis, hydration, hydroxylation and oxidation with $KMnO_4$, |
| | 3rd | Nomenclature of benzene derivatives:. Aromatic nucleus and side chain. Aromaticity: the Huckel rule, aromatic ions, annulenes up to 10 carbon atoms, aromatic, anti - aromatic and non – aromatic compounds. |
| | 4th | Aromatic electrophilic substitution general pattern of the mechanism. mechansim of nitration, halogenation, sulphonation. and Friedel-Crafts reaction Energy profile diagrams. Activating , deactivating substituents and orientation. |
| March | 1st | s-Block Elements: Comparative study of the elements including , diagonal relationships, salient features of hydrides (methods of preparation excluded), solvation and complexation tendencies including their function in biosystems. |
| | 3rd | Chemistry of Noble Gases Chemical properties of the noble gases with emphasis on their low chemical reactivity, chemistry of xenon, structure and bonding of fluorides, oxides & oxyfluorides of xenon |
| | 4th | Boron family (13th gp):- Diborane – properties and structure (as an example of electron – deficient compound and multicentre bonding), Borazene – chemical properties and structure Trihalides of Boron – Trends in lewis acid character structure of aluminium (III) chloride. Carbon Family (14th group) Catenation. $p\pi$– $d\pi$ bonding (an idea), carbides, fluorocarbons, silicates structural aspects), silicons – general methods of preparations, properties and uses. |
| April | 1st | Dienes and Alkynes Nomenclature and classification of dienes: isolated, conjugated and cumulated dienes. Structure of butadiene,. Chemical reactions 1,2 and 1,4 additions (Electrophilic & free radical mechanism), Diels-Alder reaction, |
| | 2nd | Nomenclature, structure and bonding in alkynes. Methods of formation. Chemical reactions of alkynes, acidity of alkynes. Mechanism of electrophilic and nucleophilic addition reactions, hydroborationoxidation of alkynes |
| | 3rd | Nomenclature and classes of alkyl halides, methods of formation, chemical reactions. Mechanisms and stereochemistry of nucleophilic substitution reactions of alkyl halides , SN2 and SN1reactions with energy profile diagrams. |
| | 4th | Methods of formation and reactions of aryl halides. The additionelimination and the elimination-addition mechanisms of nucleophilic aromatic substitution reactions. Relative reactivities of alkyl halides vs allyl, vinyl and aryl halides. |
| May | 1st | Revisions and class test |
| | 2nd | Revisions and class test |

# Govt. College Meham, Rohtak, Haryana
## Lesson Plan session 2022-23

Name of Extension Lecturer: Dr Ruman Rani

Class: B Sc (NM)-2$^{nd}$ Year     Semester : IV     Subject: Inorganic Chemistry+ Organic Chemistry

| Month | Week | Topic |
|---|---|---|
| Jan | 3rd | Molecular vibrations, Hooke's law, selection rules, intensity and position of IR bands, measurement of IR spectrum, fingerprint region, |
| | 4th | characteristic absorptions of various functional groups and interpretation of IR spectra of simple organic compounds. Applica tions of IR spectroscopy in structure e lucidation of simple organic compounds. |
| Feb. | 1st | Structure and nomenclatu re of amines, phys ical properties. Separation of a mixture of primary, secondary and tertiary amines.Structural featu res affecting basicity of amines. |
| | 2nd | Prepa ration of alkyl and aryl amines (reduction of nitro compounds, nitriles, reductive amination of aldehydic and ketonic compounds. Gabrielphthalimide reaction. |
| | 3rd | Hofmann bromamide reaction. electrophilic aromatic substitution in aryl amines, reactions of amines with nitrous acid. |
| | 4th | Mechanism of diazotisation, structure of benzene diazonium chloride. Replacement of diazo group by H, OH, F, Cl, Br, I, NO2 and CN groups, reduction of diazonium salts to hyrazines, coupling reaction and its synthetic application |
| March | 1st | Preparation of nitro alkanes and nitro arenes and their chemical reactions. Mechanism of electrophilic substitution reactions in nitro arenes and their reductions in acidic, neutral and alkaline medium. |
| | 3rd | Lanthanides: Electronic structure, oxidation states and ionic radii and lanthanide contraction, complex formation, occurrence and isolation, lanthanide compounds |
| | 4th | Actinides : General features and chemistry of actinides, chemistry of separation of Np, Pu and Am from U. Comparison of properties of Lanthanides and Actinides and with transition elements . |
| April | 1st | Nomenclature and structure of the carbonyl group. Synthesis of aldehydes and ketones with particular reference to the synthesis of aldehydes from acid chlorides. |
| | 2nd | Advantage of oxidation of alcohols with chromium trioxide (Sarett reagent) pyridinium chlorochromate (PCC) and pyridinium dichromate., Physical properties. |
| | 3rd | Comparison of reactivities of aldehydes and ketones. Mechanism of nucleophilic additions to carbonyl group with particular emphasis on benzoin, aldol, Perkin and Knoevenagel condensations.. |
| | 4th | Oxidation of aldehydes, Baeyer–Villiger oxidation of ketones, Cannizzaro reaction. MPV, Clemmensen, Wolff-Kishner, LiAlH4 and NaBH4 reductions.. |
| May | 1st | Revisions and class test |
| | 2nd | Revisions and class test |

**Name of Extension Lecturer:** Dr Ruman Rani

**Class:** B Sc (NM)-3rd Year    **Semester :** VI    **Subject:** Inorganic Chemistry + Organic Chemistry

| Month | Week | Topic |
|---|---|---|
| Jan | 3rd | Heterocyclic Compounds-I: Introduction: Molecular orbital picture and aromatic characteristics of pyrrole, furan, thiophene and pyridine. |
| | 4th | Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution. Mechanism of nucleophilic substitution reactions in pyridine derivatives. Comparison of basicity of pyridine, piperidine and pyrrole |
| Feb. | 1st | Heterocyclic Compounds-II: Introduction to condensed five and six- membered heterocycles. Prepration and reactions of indole, quinoline and isoquinoline with special reference to Fisher indole synthesis, |
| | 2nd | Skraup synthesis and Bischler-Napieralski synthesis. Mechanism of electrophilic substitution reactions of, quinoline and isoquinoline |
| | 3rd | Organosulphur Compounds Nomenclature, structural features. Methods of formation and chemical reactions of thiols |
| | 4th | thioethers, sulphonic acids, sulphonamides and sulphaguanidine. Synthetic detergents alkyl and aryl sulphonates |
| March | 1st | Organic Synthesis via Enolates: Acidity of -hydrogens, alkylation of diethyl malonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate: the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate. |
| | 3rd | Synthetic Polymers: Addition or chain-growth polymerization. Free radical vinyl polymerization, ionic vinyl polymerization, Ziegler-Natta polymerization and vinyl polymers. Condensat ion or step growth polymerization. Polyeste rs ,polyamides, phenol formaldehyde resins, urea formaldehyde resins, epoxy re sins and polyurethanes. Natural and synthetic rubbers. |
| | 4th | Classification, of amino acids. Acid-base behavior, isoelectric point and electrophoresis. Preparation of -amino acids.Structure and nomenclature of peptides and proteins. Classification of proteins |
| April | 1st | Peptide structure determination, end group analysis, selective hydrolysis of peptides. Classical peptide synthesis, solid– phase peptide synthesis. Structures of peptides and proteins: Primary & Secondary structure. |
| | 2nd | Organometallic Chemistry Definition, nomenclature and classification of organometallic compounds. Preparation, properties, and bonding of alkyls of Li, Al, Hg, and Sn a brief account of metal-ethylenic complexes, mononuclear carbonyls and the nature of bonding in metal carbonyls. |
| | 3rd | Acids and Bases, HSAB Concept Arrhenius, Bronsted – Lowry, the Lux – Flood, Solvent system and Lewis concepts of acids & bases, relative strength of acids & bases, |
| | 4th | Concept of Hard and Soft Acids & Bases. Symbiosis, electronegativity and hardness and softness |
| May | 1st | Revisions and class test |
| | 2nd | Revisions and class test |

# Lesson Plan session 2022-23(Even Semester)

**Class: - BCA 4<sup>th</sup> Sem**  **Teacher: - Ms. SOPHIA**

**Subject: - DATA STRUCTURE-II**

| 16 JAN. | DATA STRUCTURE-II<br><br>1st Teaching Term 16-01-2023 To 04-03-2023 |
|---|---|
| Practical odd Sem | 16 & 17 Jan 2023 |
| Week 3 | UNIT-1:-Tree: Header nodes, Threads, Binary search trees, Searching, Insertion and deletion in a Binary search tree |
| Week 4 | AVL search trees, Insertion and deletion in AVL search tree, m-way search tree, Searching, Insertion and deletion in an m-way search tree |
| Week 5 | B-trees, Searching, Insertion and deletion in a B-tree, B+ tree, Huffman's algorithm, General trees |
| Feb – Week 1 | UNIT-2: Graphs: Warshall's algorithm for shortest path |
| Week 2 | Dijkstra algorithm for shortest path, Operations on graph |
| Week 3 | Traversal of graph, Topological sorting |
| Week 4 | UNIT-3: Sorting: Internal & external sorting, Radix sort, Quick sort |
| Week 5 | Heap sort, Merge sort, Tournament sort, Searching: Liner search, binary search, merging |
| March 1st Week | Comparison of various sorting and searching algorithms on the basis of their complexity |
| Holi Vacation | 05-03-2023 To 12-03-2023<br><br>2nd Teaching term (13-03-2023 To 16-05-2023) |
| March. week 3 | UNIT-4: Files: Physical storage devices and their characteristics, Attributes of a file viz fields, records, Fixed and variable length records, Primary and secondary keys |
| Week 4 | Classification of files, File operations, Comparison of various types of files, File organization: Serial, Sequential, Indexed-sequential, Random-access/Direct |
| Week 5 | Inverted, Multilist file organization. Hashing: Introduction, Hashing functions and Collision resolution methods |
| April Week 1,2 | Revision unit – 1, 2, 3 & 4 |
| Week 3 | Problem & Test |

6. Loomis: Data Structure and File Management,
7. Tannenbaum: Data Structure Using C, Tata McGraw-Hill.

# Lesson Plan session 2022-23(Even Semester)

Class: - BCA 2nd Sem                    Teacher: - Ms. SOPHIA

## Subject: - LOGICAL ORGANIZATION OF COMPUTER-II

| 16 JAN. | LOGICAL ORGANIZATION OF COMPUTER-II<br><br>1st Teaching Term 16-01-2023 To 04-03-2023 |
|---|---|
| Practical odd Sem | 16 & 17 Jan 2023 |
| Week 3 | UNIT-1: Memory & I/O Devices. Memory & I/O Devices: Memory Parameters |
| Week 4 | Semiconductor RAM, ROM, Magnetic and Optical Storage devices |
| Week 5 | Flash memory, I/O Devices and their controllers |
| Feb – Week 1 | UNIT-2: Sequential Logic: Characteristics, Flip-Flops, Clocked RS |
| Week 2 | D type, JK, T type and Master- Slave flip-flops |
| Week 3 | State diagram and state equations Flip-flop excitation tables |
| Week 4 | UNIT-3: Sequential Circuits: Designing registers – Serial Input Serial Output (SISO), Serial Input Parallel Output (SIPO) |
| Week 5 | Parallel Input Serial Output (PISO), Parallel Input Parallel Output (PIPO) and shift registers |
| March 1st Week | Designing counters – Asynchronous and Synchronous Binary Counters, Modulo-N Counters and Up-Down Counters |
| Holi Vacation | 05-03-2023 To 12-03-2023<br><br>2nd Teaching term (13-03-2023 To 16-05-2023) |
| March, week 3 | UNIT-4: Instruction Design & I/O Organization: Machine instruction, Instruction set selection, Instruction cycle |
| Week 4 | Instruction Format and Addressing Modes, I/O Interface, Interrupt structure |
| Week 5 | Program-controlled, Interrupt-controlled & DMA transfer, I/O Channels, IOP |
| April Week 1,2 | Revision unit – 1, 2, 3 & 4 |
| Week 3 | Problem & Test |

**Class: - BCA 6th Sem**          **Teacher: - Ms. SOPHIA**

## Subject: - OBJECT TECHNOLOGIES & PROGRAMMING USING JAVA

| 16 JAN. | OBJECT TECHNOLOGIES & PROGRAMMING USING JAVA<br><br>1st Teaching Term 16-01-2023 To 04-03-2023 |
|---|---|
| Practical Odd Sem | 16 & 17 Jan 2023 |
| Week 3 | UNIT-1: Object Oriented Methodology-1: Paradigms of Programming Languages, Evolution of OO Methodology, Basic Concepts of OO Approach, Comparison of Object Oriented and Procedure Oriented Approaches |
| Week 4 | Benefits of OOPs, Introduction to Common OO Language, Applications of OOPs |
| Week 5 | Object Oriented Methodology-2: Classes and Objects, Abstraction and Encapsulation, Inheritance, Method Overriding and Polymorphism |
| Feb – Week 1 | UNIT-2: Java Language Basics: Introduction To Java, Basic Features, Java Virtual Machine Concepts, Primitive Data Type And Variables, Java Operators, Expressions, Statements and Arrays. |
| Week 2 | Object Oriented Concepts: Class and Objects-- Class Fundamentals, Creating objects, Assigning object reference variables; Introducing Methods, Static methods, Constructors, Overloading constructors; This Keyword; Using Objects as Parameters, Argument passing, Returning objects, Method overloading, Garbage Collection, The Finalize ( ) Method |
| Week 3 | Inheritance and Polymorphism: Inheritance Basics, Access Control, Multilevel Inheritance, Method Overriding, Abstract Classes, Polymorphism, Final Keyword. |
| Week 4 | UNIT-3: Packages: Defining Package, CLASSPATH, Package naming, Accessibility of Packages, using Package Members |
| Week 5 | Interfaces: Implementing Interfaces, Interface and Abstract Classes, Extends and Implements together |
| March 1st Week | Exceptions Handling: Exception. Handling of Exception, Using try-catch, Catching Multiple Exceptions, using finally clause, Types of Exceptions, Throwing Exceptions. Writing Exception Subclasses |
| Holi Vacation | 05-03-2023 To 12-03-2023<br><br>2nd Teaching term (13-03-2023 To 16-05-2023) |
| March, week 3 | UNIT-4: Multithreading: Introduction, The Main Thread, Java Thread Model, Thread Priorities, Synchronization in Java, Inter thread Communication |
| Week 4 | I/O in Java: I/O Basics, Streams and Stream Classes, The Predefined Streams, reading from, and writing to, Console, Reading and Writing Files, The Transient and Volatile Modifiers, Using Instance of Native Methods |

| Week 5 | Strings and Characters: Fundamentals of Characters and Strings, The String Class, String Operations, Data Conversion using Value Of ( ) Methods , String Buffer Class and Methods |
|---|---|
| April Week 1,2 | Revision unit – 1, 2, 3 & 4 |
| Week 3 | Problem & Test |

# Lesson Plan session 2022-23(Even Semester)

Class: - B.Sc. (Math Hons) 4th Sem

Teacher: - Ms. SOPHIA

Subject: - DATA STRUCTURES USING C

| 16 JAN. | DATA STRUCTURES USING C<br><br>1st Teaching Term 16-01-2023 To 04-03-2023 |
|---|---|
| Practical odd Sem | 16 & 17 Jan 2023 |
| Week 3 | UNIT-1 Data structure and its essence, Data structure types. |
| Week 4 | Linear and list structures: Arrays, stacks, queues and lists; Sequential and linked structures; Simple lists, circular lists, doubly linked lists. |
| Week 5 | Inverted lists, threaded lists, Operations on all these structures and applications. |
| Feb – Week 1 | UNIT-2 Arrays, Multidimensional arrays, sequential allocation. |
| Week 2 | Address calculations, sparse arrays. Tree structures: Trees; binary trees and binary search trees |
| Week 3 | Implementing binary trees, Tree traversal algorithms, threaded trees, trees in search algorithms. AVL Trees. |
| Week 4 | UNIT-3 Graph data structure and their applications. |
| Week 5 | Graph traversals, shortest paths, spanning trees and related algorithms. |
| March 1st Week | Family of B-Trees: B-tree, B*-Trees, B+ Trees. |
| Holi Vacation | 05-03-2023 To 12-03-2023<br><br>2nd Teaching term (13-03-2023 To 16-05-2023) |
| March, week 3 | UNIT-4: Sorting: Internal and External sorting. Various sorting algorithms, Time and Space complexity of algorithms. |
| Week 4 | Searching techniques and Merging algorithms. |
| Week 5 | Applications of sorting and searching in computer science |
| April Week 1.2 | Revision unit – 1, 2, 3 & 4 |
| Week 3 | Problem & Test |

6. Loomis: Data Structure and File Management, Prentice Hall.
7. Tannenbaum: Data Structure Using C, Tata McGraw-Hill.

# Lesson Plan session 2022-23(Even Semester)

**Class: - BCA 4th Sem**          **Teacher: - Ms. SOPHIA**

**Subject: - SOFTWARE ENGINEERING**

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| **16 JAN.** | SOFTWARE ENGINEERING<br><br>1st Teaching Term 16-01-2023 To 04-03-2023 |
| **Practical odd Sem** | 16 & 17 Jan 2023 |
| **Week 3** | UNIT-1: Introduction: Software Crisis, Software Processes & Characteristics, Software life cycle models, Waterfall, Prototype, Evolutionary and Spiral Models |
| **Week 4** | Software Requirements Analysis & Specifications. Requirement engineering, requirement elicitation techniques like FAST, QFD, requirements analysis using DFD |
| **Week 5** | Data dictionaries & ER Diagrams, Requirements documentation, Nature of SRS, Characteristics & organization of SRS |
| **Feb – Week 1** | UNIT-2: Software Project Management Concepts The Management spectrum, The People, The Problem, The Process, The Project |
| **Week 2** | Software Project Planning: Size Estimation like lines of Code & Function Count |
| **Week 3** | Cost Estimation Models, COCOMO, Risk Management |
| **Week 4** | UNIT-3: Software Design: Cohesion & Coupling, Classification of Cohesiveness & Coupling, Function Oriented Design, Object Oriented Design. Software Metrics: Software measurements: What & Why |
| **Week 5** | Token Count, Halstead Software Science Measures, Design Metrics, Data Structure Metrics Software Implementation: Relationship between design and implementation |
| **March 1st Week** | Implementation issues and programming support environment; Coding the procedural design, good coding style |
| **Holi Vacation** | 05-03-2023 To 12-03-2023<br><br>2nd Teaching term (13-03-2023 To 16-05-2023) |
| **March. week 3** | UNIT-4: Software Testing: Testing Process, Design of Test Cases, Types of Testing, Functional Testing, Structural Testing, Test Activities |
| **Week 4** | Unit Testing, Integration Testing and System Testing, Debugging Activities. Software Maintenance: Management of Maintenance |
| **Week 5** | Maintenance Process, Reverse Engineering, Software Re-engineering, Configuration Management, Documentation |
| **April Week 1,2** | Revision unit – 1, 2, 3 & 4 |
| **Week 3** | Problem & Test |

6. Loomis: Data Structure and File
7. Tunnenbaum: Data Structure Using C, Tata McGraw-Hill.

# Lesson Plan session

**Class: - BCA 2<sup>nd</sup> Sem**          **Teacher: - Mr. Suresh Kumar**

**Subject: - 'C' PROGRAMMING**

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| **16 JAN.** | **'C' PROGRAMMING**<br><br>**1<sup>st</sup> Teaching Term 16-01-2023 To 04-03-2023** |
| **Practical odd Sem** | **16 & 17 Jan 2023** |
| Week 3 | UNIT-1: Overview of C: History of C, Importance of C, Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables, Assignment statement, Symbolic constant, Structure of a C Program. |
| Week 4 | printf(), scanf() Functions, Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, shorthand assignment operators, conditional operators and increment and decrement operators. |
| Week 5 | Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion, operator hierarchy & associativity. |
| **Feb** – Week 1 | UNIT-2: Decision making & branching: Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder. |
| Week 2 | switch statement, goto statement. Decision making & looping. |
| Week 3 | Decision making & looping: For, while, and do-while loop, jumps in loops, break, continue statement, Nested loops. |
| Week 4 | UNIT-3: Functions: Standard Mathematical functions, Input/output: Unformatted & formatted I/O function in C, Input functions. |
| Week 5 | getch(), getche(), getchar(), gets(), output functions viz., putch(), putchar(), puts(), string manipulation functions. |
| March 1<sup>st</sup> Week | User defined functions: Introduction/Definition, prototype, Local and global variables, passing parameters, recursion. |
| Holi Vacation | **05-03-2023 To 12-03-2023**<br><br>**2<sup>nd</sup> Teaching term (13-03-2023 To 16-05-2023)** |
| March, week 3 | UNIT-4: Arrays, strings and pointers: Definition, types, initialization, processing an array, passing arrays to functions, Array of Strings. String constant and variables, Declaration and initialization of string. |
| Week 4 | Input/output of string data, Introduction to pointers. Storage classes in C: auto, extern, register and static storage class, their scope, storage, & lifetime. |
| Week 5 | Algorithm development, Flowcharting and Development of efficient program in C. |
| April Week 1,2 | Revision unit – 1, 2, 3 & 4 |
| Week 3 | Problem & Test |

# Lesson Plan session 2022-23(Even Semester)

**Class: - BCA 4th Sem**                    **Teacher: - Mr. Suresh Kumar**

**Subject: - Object Oriented Programming Using C++**

| 16 JAN. | **Object Oriented Programming Using C++** <br><br> **1st Teaching Term 16-01-2023 To 04-03-2023** |
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| **Practical odd Sem** | **16 & 17 Jan 2023** |
| Week 3 | UNIT-1: Object Oriented Programming Concepts: Procedural Language and Object-Oriented approach, Characteristics of OOP. |
| Week 4 | User defined types, polymorphism and encapsulation. Getting started with C++: syntax, data types, variables. |
| Week 5 | String, function, namespace and exception, operators, flow control, recursion, array and pointer, structure. |
| **Feb** – Week 1 | UNIT-2: Abstracting Mechanism: classes, private and public, Constructor and Destructor , member function. |
| Week 2 | Static members, references, Memory Management. |
| Week 3 | Memory Management: new, delete, object copying, copy constructer, assignment operator, this input/output. |
| Week 4 | UNIT-3: Inheritance and Polymorphism: Derived Class and Base Class, Different types of Inheritance. |
| Week 5 | Overriding member function, Abstract Class, Public and Private Inheritance. |
| March 1st Week | Ambiguity in Multiple Inheritance, Virtual function, Friend function, Static function. |
| Holi Vacation | **05-03-2023 To 12-03-2023** <br><br> **2nd Teaching term (13-03-2023 To 16-05-2023)** |
| March, week 3 | UNIT-4: Exception Handling: Exception and derived class, function exception declaration, unexpected exception, exception when handling exception. |
| Week 4 | Resource capture and release. Template and Standard Template Library, Template classes. |
| Week 5 | Template and Standard Template Library: Template classes, declaration, template functions, namespace, string, iterators, hashes, iostreams and other types |
| April Week 1,2 | Revision unit – 1, 2, 3 & 4 |
| Week 3 | Problem & Test |

# Lesson Plan session 2022-23(Even Semester)

**Class: - BCA 6th Sem**                **Teacher: - Mr. Suresh Kumar**

**Subject: - INTRODUCTION TO .NET**

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| **16 JAN.** | **INTRODUCTION TO .NET** <br><br> **1st Teaching Term 16-01-2023 To 04-03-2023** |
| **Practical Odd Sem** | **16 & 17 Jan 2023** |
| Week 3 | UNIT-1: The Framework of .Net: Building blocks of .Net Platform (the CLR, CTS and CLS), Features of .Net |
| Week 4 | Deploying the .Net Runtime, Architecture of .Net platform, Introduction to namespaces & type distinction. |
| Week 5 | Types & Object in .Net, the evolution of Web development. |
| **Feb** – Week 1 | UNIT-2: Class Libraries in .Net, Introduction to Assemblies & Manifest in .Net, Metadata & attributes. |
| Week 2 | Introduction to C#: Characteristics of C#, Data types: Value types. |
| Week 3 | Reference types, default value, constants, variables, scope of variables, boxing and unboxing. |
| Week 4 | UNIT-3: Operators and expressions: Arithmetic, relational, logical, bitwise, special operators, evolution of expressions. |
| Week 5 | Operator precedence & associativity, Control constructs in C#: Decision making, loops, Classes & methods. |
| March 1st Week | Classes & methods: Class, methods, constructors, destructors, overloading of operators & functions. |
| Holi Vacation | **05-03-2023 To 12-03-2023** <br><br> **2nd Teaching term (13-03-2023 To 16-05-2023)** |
| March, Week 3 | UNIT-4: Inheritance & polymorphism: visibility control, overriding, abstract class & methods, sealed classes & methods, interfaces. |
| Week 4 | Advanced features of C#: Exception handling & error handling. |
| Week 5 | Automatic memory management, Input and output (Directories, Files, and streams). |
| April Week 1,2 | Revision unit – 1, 2, 3 & 4 |
| Week 3 | Problem & Test |

## प्रश्नोत्तरी प्रतियोगिता का परिणाम

| क्रमांक | विद्यार्थियों के नाम | कक्षा अनुक्रमांक | कक्षा | स्थान |
|---|---|---|---|---|
| | Team D | | | |
| 1. | Mohit, Versha, Jyoti Himanshi | 12-13000-2124 2099 2075 2621 | BA Ist, IInd IIIrd | Ist |
| 2. | Team C Aashish, Ritu, Anita Sneha | 2392, 2196 2390, 2455 | BA Ist, IInd IIIrd | IInd |
| 3. | Team-E kiran, Anjali Jyoti, Jyoti | 2484, 2120 2055, 2606 | BA Ist, IInd IIIrd | IIIrd |

विभागाध्यक्ष

पिंकी रानी



**कॉलेज में हुई हिन्दी प्रश्नोत्तरी प्रतियोगिता में टीम डी अव्वल रही**

महम कॉलेज में हुई प्रश्नोत्तरी के विजेता विद्यार्थी।

महम, 18 अप्रैल (प्रीत): राजकीय महाविद्यालय, महम के हिंदी विभाग द्वारा प्रश्नोत्तरी प्रतियोगिता का आयोजन किया गया। प्रतियोगिता में 7 टीमों ने हिस्सा लिया। इस प्रतियोगिता में अनेक छात्र, छात्राओं ने प्रतिभागियों का उत्साहवर्धन किया।

कार्यक्रम का संचालन हिंदी विभाग ने किया। संचालन में डॉक्टर बबीता व पिंकी ने किया और विद्यार्थियों से प्रश्न पूछे। मंडल में ममता संस्कृति विभागाध्यक्ष व हिंदी विभाग से डॉक्टर दिनेश कुमार उपस्थित रहे। सभी टीमों ने अच्छा प्रदर्शन किया। बराबरी से एक दूसरे को चुनौती देते हुए टीम डी ने प्रथम स्थान प्राप्त किया। टीम सी ने द्वितीय व टीम ई ने तृतीय स्थान प्राप्त किया। अंत में विभागाध्यक्ष पिंकी ने विजेताओं को बधाई देते हुए उज्जवल भविष्य की कामना की। कार्यक्रम के दौरान बबीता, सविता ने सविता व डॉक्टर दिनेश सहित कई