Vindhya Institute Of Management & Science

BCA FIRST YEAR CURSE PLAN

Subject Name –Hindi	Title – भाषा और संस्कृति
Subject type- Foundation	Subject Code-X1-FCEA1T

Course Content

इकाई 1	Hours
1.मैथलीशरणगुप्तपरिचय पाठ: मातृभूमि (कविता) 2. प्रेमचन्द :परिचय पाठ : शतरंजकेखिलाड़ी (कहानी) 3. शरदजोशी–जीपपरसवारइल्लियाँ(व्यंग)	5 घण्टे
इकाई 2 1. वैचारिक–भारतीयभाषाओंमेंराम 2. आचार्यरामचंद्रशुक्लपरिचय पाठ : उत्साह (भावमूलकनिबंध) 3. रामधारीसिंहदिनकरपरिचय पाठ : भारतएकहै (संस्कृति) 4. आदिशंकराचार्य - जीवनवदर्शन	5 घण्टे
इकाई 3 1. पर्यावाचीशब्द :विलोमशब्द, अनेकशब्दकेलिएएकशब्द (हिंदीव्याकरण) 2. संधिऔरउसकेप्रकार (हिंदीव्याकरण) 3. बीजशब्द - धर्म,अद्वैत, भाषा, अवधारणा,उदारीकरण	5 घण्टे

पाठ्यपुस्तकें, संदर्भपुस्तकेंअन्यसंसाधन

1. प्रेमचन्द मानसरोवर, खंड3

2. आचार्यरामचंद्रशुक्ल -चिंतामणि, भाग1

3. डॉ. वासुदेवनन्दनप्रसाद : आधुनिकहिंदीव्याकरणऔररचना, भारतीभवन,ठाकुरबाड़ीरोड,पटना, बिहार

4डॉ. राजेश्वरचतुर्वेदी, हिंदीव्याकरणउपकारप्रकाशन, आगरा

5. हिंदीज्ञानकोष

6. इंटरनेटसामग्री -टैगमेंउल्लेखित

Subject Title::English Language and Indian Culture	
Subject Type: Foundation	**Subject Code: X1FCHB1T**

Unit	**No. Of Lecture**
Unit-1 **Reading, Writing and Interpretation Skills:** 1. Where The Mind is Without Fear- Rabindranath Tagore **[Key Word: Patriotism]** 2. National Education - M. K. Gandhi **[Key Word: Edificatio**n] 3. The Axe- R.K Narayan **[Key Word: Environment]** 4. The Wonder That Was India- A.L Basham (an excerpt) **[Key Word: Indianness]** 5. Preface to the Mahabharata C. Rajagopalachari [**Key Word: Indian Mythology**]	05
Unit -2 **Comprehension Skill:** Unseen Passage followed by Multiple choice questions	05
Unit -3 **Basic Language Skills 1**: Vocabulary Building: Suffix, Prefix, Synonyms, Antonyms, Homophones, Homonyms and One-word substitution. 2: Basic Grammar: Noun, Pronoun, Adjective, Verb, Adverb, Prepositions, Articles,	05

Suggested Readings:

Textbooks, Reference Books, Other Resources:

Essential English Grammar-Raymond Murphy, Cambridge University Press.

- Practical English Grammar Exercises 1- A. J. Thomson & A. V. Martinet, Oxford India.
- Practical English Usage - Michael Swan, Oxford
- English Grammar in Use - Raymond Murphy, Cambridge University Press.

Subject – Environment Education	
Subject Type- Foundation	**Subject Code-X1-FCAC1T**

Unit	No. Of Lecture
Unit1 **Environment and Natural Resources:** • Multidisciplinary nature, Scope and Importance of Environment • Components of Environment: Atmosphere, Hydrosphere, Lithosphere, andBi osphere. • Brief account of Natural Resources and associated problems: Land Resource, Water Resource, Energy Resource. • Concept of Sustainability and Sustainable Development Keywords: Environment, Forest, Mineral, Food, Land, Water, Energy, Sustainable,development	5 Hrs.
Unit-2 **Biome, Ecosystem and Biodiversity:** • Major Biomes: Tropical, Temperate, Forest, Grassland, Desert, Tundra, Wetland, Estuarine and Marine • Ecosystem: Structure function and types their Preservation & Restoration • Biodiversity and its conservation practices **Keywords: Biome, Ecosystem, Biodiversity**	4 Hrs.
Unit-3 **Environmental Pollution, Management and Social Issues:** • Pollution: Types, Control measures, Management and associated problems. • Environmental Law and Legislation: Protection and conservation Acts. • International Agreement & Programme. • Environmental Movements, communication and public awareness programme. • National and International organizations related to environment conservation and monitoring. • Role of information technology in environment and human health. **Keywords: Pollution, Environmental Legislation, Environmental Movement, Environmental programme and organization.**	4 Hrs.

Textbooks, Reference Books, Other Resources

- **Singh; J.S., Singh S.P. and Gupta, S.R.; "Ecology; Environment Science and Conservation "S Chand publishing, New Delhi, (2018)**

- **Divan, S. and Rosencranz, A., "Environmental Law and Policy in India :Cases, Material &**
- **Status" Oxford University Press, India, (2002) 2nd, Edition.**

- **Odum, E.P., "Fundamentals of Ecology", Philadelphia Saundres, (1971**
- **Bharucha, Erach, "Environmental studies" Universities Press India Pvt. Ltd. Hyderabad (2014) (Hindi Edition also available)**

- **Kaushik, Anubha, Kaushik, C.P. "Perspectives in Environmental Studies "New age International Publishers, (2018), 6 Edition.**
- **Asthana, D. K Asthana Meera, "A Textbook of Environmental Studies", S. Chand Publishing, New Delhi, (2007)**
- **National Digital Library (https://ndl.iitkgp.ac.in/homestudy/science)**
- **Epg-pathshala (https://epgp.inflibnet.ac.in/Home/Download)**
- **NPTEL (https://nptel.ac.in/course.html)**
- **Coursera (https://www.coursera.org/search?query=environmental+science&page=1**
- **इराकभरूचा, पर्यावरण अध्ययन, ओरियन्टब्लैकस्वान प्राइवेट लिमिटेडनई दिल्ली (2014)**
- **दयाशंकर त्रिपाठी, पर्यावरण अध्ययन मोतीलाल बनारसीलाल पब्लिशर्स दिल्ली. (2005)**
- **रतनजोशी , पर्यावरण अध्ययन, साहित्य भवनपब्लिकेशन्स. (2018)**

Subject – Yoga And Meditation	
Subject Type- Foundation	**Subject Code-A1-YOSC1F**

Topic	No. of Lecture
Unit-1 **Introduction to Yoga and Yogic Practices** **1.**Yoga: Etymology definitions,aim,objectives and Misconceptions **2.**Yoga: Its Origin,historyand development **3.**Rules and regulations to be followed by Yoga Practitioners **4.**Introduction to Yoga practices 5. Shatkarma : meaning, purpose and their significance in Yoga Sadhana 6. Introduction to Yogic Loosening practices and Surya Namaskar **Key Words: History and Development of Yoga, Shatkarma , Common Yogic Practices.**	10
Unit-2 **Breathing Practices and Pranayama** 1. 1. Sectional Breathing (Abdominal, Thoracic and Clavicular) 2. Yogic Deep Breathing 3. Concept of Puraka , Rechaka and Kumbhaka 4. Concept of Bandha and Mudra 5. AnulmoaViloma /NadiShodhana 6. Shitali 7. Bhramari Key Words :Sectional breathing, Deep breathing, Bandha & Mudra, Shitali , Bhramari .	10
Unit-3 **Practices leading to Meditation** 1.Recitation of Pranava Mantra 2. Recitation of Hymns, in vocations and prayers 3. Anter Maun 4. Breath Meditation 5. Om Dhyana Key Words: Pranav Mantra, Antermaun, Breath Meditation, Om Dhyan.	10

Suggested Readings: Text Books, Reference Books, Other resources

1. Singh S. P & Yogi Mukesh: Foundation of Yoga, Standard Publication, New Delhi, 2010

2. Swami Dhirendra Brahmchari : YogasanaVijnana , Dhirendra Yoga Publication, New Delhi, 1966.

3. Saraswati , Swami Satyanand : Asana, Pranayama , Mudra , Bandha (APMB), Yoga Publication Trust, Munger , 2013.

4. H. R. Nagendra: Asana, Pranayama, Mudra, Bandha , Swami Vivekananda YogPrakashan , Bangalore, 2002.

5. Ishwar Bhardwaj : SaralYogasana , Satyam Publishing House, New Delhi, 2018.

6. Shri Rai Singh Chouhan : Mudra Rahasya , Bhartiya Yog Sansthan , New Delhi, 2014.

7. Dr. Vishwanath Prasad Sanha : Dhyan Yoga, Bhartiya Yog Sansthan , New Delhi, 1987.

8. Shri Deshraj: Dhyan Sadhana, Bhartiya Yoga Sansthan, New Delhi, 2015.

Suggestive digital platforms web links:

1. www.rishikeshnathyogshala.com

Suggested equivalent online courses: 1.https://sahayji.com/hathayoga-course

2. https://theyogainstitute.org/

Subject – Computer ,Organization and Architecture	
Subject Type- Major	**Subject Code-S1-BCA-A1T**

Topic	No. of Lecture
Unit-1 **Fundamentals of computers**: Definition, Characteristics, capabilities 8 and limitations. Types of Computers: Analog, Digital, Micro, Mini, Mainframe & Super | Computers, Work Station, Server computers. Generations of Computers. Smart Systems: definition, characteristics and applications. Definition of Embedded system, GIS, GPS, Cloud Computing, | Uses of computers in e-governance and various public domains and services.	8
Unit-2 Block diagram of computer and its functional units. Concept of hardware, software and firmware. Types of software. **Input devices** - keyboard, scanner, mouse, light pen, bar code reader, OMR, OCR, MICR, track ball, joystick, touch screen camera, mic ete. **Output devices:** monitors ~ classification of monitors based on technology -CRT & flat panel, LCD, LED monitors, speakers, printers ~ dot matrix printer, ink jet printer, laser printer, 3D Printers, Wi-Fi enabled printers, plotters and their types , LCD/LED projectors. Computer memory and its types, Storage devices: Magnetic tapes, Floppy Disks, Hard Disks, Compact Disc - CD-ROM, CD-RW, VCD, DVD, DVD-RW, usb drives, Blue Ray Disc, SD/MMC Memory cards.	10
Unit-3 **Fundamentals of Digital Electronics:** Data Types, Complements, Fixed-Point Representation, Floating-Point Representation, Binary and other Codes, Error Detection Codes. **Logic Gates**, Boolean Algebra, Map Simplification, Combinational Cireuits, Sequential Circuits, simple combinational circuit design problems. **Combinational Circuits-** Adder- Subtractor, Multiplexer, Demultiplexer, Decoders, Encoders **Sequential Circuits** ~ Flip - Flops, Registers, Counters.	10
Unit-4 **Basic Computer Organization:** Instruction codes, Computer Registers, Computer Instructions, Timing & Control, Instruction Cycles, Memory Reference Instruction, Input - Output & Interrupts Instruction formats, Addressing modes, Instruction codes, Machine language, Assembly language. **Register Transfer and Micro operations:** Register Transfer Language, Register Transfer, Bus & Memory Transfer, Arithmetic Microoperations, Logic Micro-	10

operations, Shift Micro-operations.	

Unit-5 **Processor and Control Unit:** Hardwired vs. Micro programmed Control Unit, General Register Organization, Stack Organization, Instruction Format, Data Transfer & Manipulation, Program Control, Introductory concept of RISC, CISC, advantages and disadvantages of both. Pipelining ~ concept of pipelining, introduction to Pipelined data path and control — Handling Data hazards & Control hazards.	10
Unit-6 **Memory and I/O Systems -** Peripheral Devices, I/O Interface, Data Transfer Schemes - Program Control, Interrupt, DMA Transfer. I/O Processor, **Memory Hierarchy,** Processor vs. Memory Speed, High-Speed Memories, Main memory & its types, Auxiliary memory, Cache Memory, Associative Memory, Interleaving, concept of Virtual Memory, Hardware support for Memory Manageme	10
Unit-7 **Indian contribution to the field —** Contributions of reputed scientists of Indian origin - like - Dr. Vinod Dham — Father of Intel Pentium | Processor, Dr, Ajay Bhat — Co-Inventor of USB Technology, Dr. Vinod Khosla- co-founder of Sun Microsystems, Dr. Vijay P Bhatkar - architect | of India's national initiative in supercomputing, and many others. | Parallel Computing projects of India - PARAM, ANUPAM, FLOSOLVER, CHIPPS etc. Other relevant contributors and contributions,	2

Text Books (List of books as mentioned in the approved syllabus)

1. M.Marris Mano, "Computer Sa Archiecne PHI,
2. HeuringJordan , "Computer System Design & Architecture" (A.W.L. =
3. Gupta BR, Digital Electronics, SK Kataria Publishers,2009

References

1.William Stalling, "Computer Organization & Architecture", Pearson Education Asia.

2.V. Carl Hamacher , "Computer Organization", TMH

3.Tannenbaum, "Structured Computer Organization", PHI.

Subject – Programming Methodology and Data Structure	
Subject Type- Major	**Subject Code-S1-BCA-A2T**

Topic	No. of Lecture
Uint-1 **Introduction to Programming:** Program concept, Characteristics of Programming, Stage in Program Development, Algorithm, Notations, Design, Flowcharts, Types of Programming Methodologies. **Basic of C++:** A Brief History of C++, Applications of C++, Compiling and Linking, Tokens, Keywords, Identified and Constants, Basic Data Types, User Defined Data Types, Symbolic Constant, Type Compatibility, Reference variables, Operators in C++, Scope resolution operators, Manipulator, Type Cast Operator. **Functions in C++:** The Main function, Function prototyping, Call by Reference, Call By Address, Call By Value, Return by reference, Inline Function, Default Arguments, Constants Arguments, Function Overloading, Function with Array.	8
Unit-2 **Class and Objects:** A Sample C++ program with class, Defining Member functions, Making an outside Function Inline, Nesting of Member functions, Private Member functions, Arrays within a class, Memory Allocation for objects, Static Data Members, Static Member functions, Array of Objects, Objects as Function Arguments, Friend Function, Virtual Functions, Returning Objects, Constant member functions, Pointer to Members, Local Classes. **Constructor & Destructor:** Constructor, Parameterized constructor, Multiple Constructors in a class, Constructors with Default Arguments, Dynamic Initialization of Objects, Copy Constructor, Dynamic Constructor, Destructor.	10
Unit-3	

Inheritance: Defining Derived Classes, Single Inheritance, Making a Private Member Inheritable, Multilevel Inheritance, Hierarchical Inheritance, Multiple Inheritance, Hybrid Inheritance, Virtual Base Classes, Abstract Class, Constructor in Derived classes, Nesting of classes. **Operator Overloading:** Operator Overloading and Type Conversion, Polymorphism, Pointers, Pointer with Arrays with C++. **Streams:** C++ Stream classes, Unformatted I/O Operations, Formatted I/O Operation, Managing Output with Manipulators, Exception Handling.	8
Unit-4 **Data Structure:** Basics Concepts, Linear and Non-Linear data structures. **Algorithm Specifications:** Introduction, Recursive algorithm, Data Abstraction, Performance analysis. **Arrays:** Representation of single, two-dimensional arrays, triangular arrays, sparse matrices-array and linked representation. **Stacks:** Operations, Array and Linked Implementations, Applications- Infix to Postfix conversion, Infix to prefix conversion, Postfix Expression Evaluation, Recursion Implementation. **Queues:** Definition, Operations, Array and Linked Implementations, Circular Queue (Insertion and Deletion Operations), Dequeue (Double Ended Queue), Priority Queue Implementation.	12
Unit-5 **Linked Lists:** Singly Linked Lists – Operations, Concatenating, Circular linked list – Operations for Circular linked list, Doubly linked lists – Operations for Doubly linked list, Header Linked List **Trees:** Representation of Trees, Binary tree, Properties of Binary trees, Binary tree Representation – Array and Linked Representations, Binary tree traversals, Threaded Binary tree **Heap:** Definition, Insertion, Deletion	10
Unit-6 **Graph:** Graph ADT, Representation of graphs, Graph traversal: Breadth first search, Depth first Search	10

Hashing: Introduction, Hash-tables, Hashing functions, Overflow Handling **Sorting:** Bubble sort, Selection sort, Insertion Sort, Quick Sort, Merge Sort, Comparison of Sorting Methods. **Search Trees:** Binary search Tree, AVL Tree – Definition and Examples	
Unit-7 **Indian Contribution to the Field:** Innovations in India, Origin of Julia Programming Language, Indian Engineers who designed new programming language, Open Source Language, Dr. Sartaj Sahni – Computer Scientist, Pointer of Data Structures, Other relevant contributors and contributions.	2

Text Books (List of books as mentioned in the approved syllabus)

1. J.R. Hanly and E. B. Koffma, "Problem Solving and Program Design in C", Pearson, 2015
2. E. Balagurusamy," C++ ", TMH Publication ISBN O-07-462038-X
3. Herbert Schild, "C++ the Complete Reference, TMH Publication ISBN O-07-463880-7

Subject Type- Minor	Subject Code-S1-BCA-B2T

Topic	Lecture of Number
Unit-1 "**Introduction . to operating system**: what is operating system? History and Evolution of OS, Basic OS functions, Resource Abstraction, Types of operating Systems- Batch Systems, Multiprogramming Systems, Multiprocessing Systems, Time Sharing Systems, Distributed OS, Real time systems. Operating System for Personal Computers, Workstations and Hand-held Devices. Applications of various operating system in real world. Some prevalent operating systems - windows, UNIX, Linux, Android, MacOS, Blackberry OS, Symbian, Bada etc	6
Unit-2 **Process Management**:.: Process Concepts, Process states & Process Control Block Scheduling Criteria, **Scheduling Algorithms** - FCFS, SJF, SRTN, RR, Priority, multilevel Queue and Multilevel Feedback **Deadlock** - Definition, Deadlock Characterization, Necessary Conditions for Deadlock. **Deadlock Handling Approaches**: Prevention, Avoidance, Recovery. and Sufficient Detection and	14
Unit-3 **Memory Management Introduction**, Address Binding, Logical versus physical Address Space, Swapping, Contiguous & Non-Contiguous Allocation, Fragmentation (Internal & External), Compaction, Paging, Segmentation Virtual Memory, Demand Paging, Performance of Demand Paging, Page Replacement Algorithms. **File Management**: Concept of File System(File Attributes, Operations, Types), Functions of File System, Types of File System, Access Methods (sequential, Direct & other methods), **Directory structure** (Single-Leve1, iruo-L.re1, Tree-Structured,	14

Acyclic-Graph, General Graph), Allocation Methods (Contiguous, Linked, Indexed)	
Unit-4 **Disk Management: structure**, Disk Scheduling Algorithms (FCFS, SSTF, SCAN, C-SCAN, LOOK), Swap Space Management, Disk Reliability, Recovery. **Security**: Security Threats, Security policy mechanism, Protection, Trusted System, Authentication and Internal Access Authorization, Windows	12
Unit-5 **Linux introduction**: and features of Linux, advantages, hardware requirements for installation, Linux architecture, file system of Linux - boot block, super block, inode table, data blocks. Linux standard directories, Linux kenel, Partitioning the hard drive for Linux, installing the Linux System, system - startup and shut-down process, init arid run levels. Process, Swap, Partition, fdisk, checking disk free spaces. l) Difference between CLI OS & GUI OS, Windows v/s Linux, Importance of Linux Kernel, Files and Directories , Concept of open source software	12
Unit-6 **Indian contribution to the field**- the BOSS operating system, open source software, growth of LINUX, Aryabhatt Linux, contributions of innovators –Raien Sheth, Sunder Pichai etc	2

Text Books (List of books as mentioned in the approved syllabus)

1. A Silberschatz, P.B. Galvin, G. Gagne, Operating Systems Concepts, Edition, John Wiley
2. A.S. Tanenbaum, Modern Operating Systems, 3rd Edition, Pearson Education'.
3. Operating System bY Peterson
4. Linux bv Sumitabh Das

Subject – Discrete Mathmatics

Subject Type- Elective	Subject Code-S1-BCA-C2G

Topic	No of Lecture
Unit-1 Rclations: Binary, Inverse, Composite and Equivalence relation, Equivalence classes and its properties, Partition of a set, Partial order relation, Partially ordered and Totally ordered sets, Hasse diagram. Lattices: Definition and examples, Dual, bounded, distributive and complemented lattices	18
Unit-2 Boolean Algebra :Definition and properties, Switching circuits and its applications. Logic gates and circuits. Boolean functions: Disjunctive and conjunctive normal forms, Bool's expansion theorem, Minimize the Boolean function using Karnaugh Map	18
Unit-3 Graphs:Definition and types of graphs, Subgraphs, Walk, path and circuit, Connected and disconnected graphs, Euler graph, Hamiltonian path and circuit, Dijkstra's Algorithm for shortest paths in weighted graph.	18
Unit-4 Trees: Definition and its properties, Rooted, Binary and Spanning tree Rank and nullity of a graph, Kruskal's and Prim's Algorithm, Cut-set and its properties, Fundamental Circuit and Cut-Set, Planar graphs. Matrix representation of graphs: Incidence, Adjacency, Circuit, Cut-set Path	18
Unit-5 Discrete numeric and generating functions:Operations on numeric functions, Asymptotic behavior of numeric functions, Generating functions. Recurrence relations and recursive algorithms:Recurrence relations, Linear	18

recurrence relations with constant coefficients, Homogeneous solutions, Particular solutions, Total solutions, Solution by the method of generating functions.	

Text Books (List of books as mentioned in the approved syllabus)

1. J. P. Tremblay and R. Manohar, Discrete Mathematical Structures WithAppiications
To Computer Science, McGraw Hill Education, 1st edition, 2017.
2. C. L. Liu: Elements of Discrete Mathematics, McGraw Hill Education, 4th edition, 20t7.
3. Narsingh Deo: Graph Theory with Applications to Engineering and Computer Science,
Prentice Hall India Learning Private Limited, 1979.

References

1. Seymour Lipschutz and Mark Lipson: Discrete Mathematics (Schaum's Outline), McGraw Hill Education, 3rd edition, 2017.
2. Edgar G. Goodaire and Michael M. Parmenter, Discrete Mathematics with Graph Theory, Pearson Education Pte.Ltd., Indian Reprint 2003.

Subject – Web Designing	
Subject Type- Vocational	**Subject Code-V1-COS-WEBT**

Unit	Topic	No. Of Lecture
Unit-1	I**ntroduction to Internet**- World Wide Web, Internet Addressing, Browser, URL, Web server, website, homepage, Domain Name. Basic concepts. **Softwares for Web Designing** - Notepad/Notepad++, Dreamweaver, Blue Griffon, Net beans, Sea Monkey, Word press, Sublime. Introduction to HTML: HTML Tags and Attributes, HTML Basic Tags, Formatting Tags, HTML Color Coding, Div and Span Tags for Grouping. Lists: Unordered Lists, Ordered Lists, Definition list. Images: Image and Image Mapping **Hyperlink:** URL Uniform Resource Locator, URL Encoding. Table: <table>, <th>, <tr> <td>, <caption>, <thead>, <tbody>, <tfoot>, <colgroup>, <col>. Attributes Using Iframe as the Target **Form:** <input>, <textarea>, <button>, <select>, <label> **Headers**: Title, Base, Link, Styles, Script HTML Meta Tag, XHTML, HTML Deprecated Tags & Attributes	6
Unit-2	**CSS**: Introduction, Features and benefits of CSS, CSS Syntax, External Style Sheet using <link>, Multiple Style Sheets, Value Lengths and Percentages. **Selectors:** ID Selectors, Class Selectors, Grouping Selectors, Universal Selector, Descendant/Child Selectors, Attribute Selectors, CSS-Pseudo Classes. Color Background Cursor: background-image, background-repeat, background- position, CSS Cursor **Text Fonts**: color, background-color, text-decoration, text-align, vertical-align, text-indent, text-transform, white-space, letter-spacing, word-spacing, line-height,	5

	font-family, font-size, font-style, font-variant, font-weight.	
Unit-3	**Lists Tables**: list-style-type, list-style-position, list-style-image, list-style, CSS Tables (border, width & height, text-align, vertical-align, padding, color) Box Model: Borders & Outline, Margin & Padding, Height and width, CSS Dimensions. **Display Positioning**: CSS Visibility, CSS Display, CSS Scrollbars, CSS Positioning (Static Positioning, Fixed Positioning, Relative Positioning, Absolute Positioning), CSS Layers with Z-Index. **Floats:** The float Property, The clear Property, The clearfix Hack.	5
Unit-4	**The JavaScript**: Nature of JavaScript, Script Writing Basics, Enhancing HTML Documents with JavaScript, The Building Blocks. Introduction to JavaScript, JavaScript Engines, Values, Variables and Operators, Variable Mutation, Basic Operators, Operator Precedence, JavaScript Types, Types Definition, Types in JavaScript, Objects, Type Conversion and Coercion, Static vs Dynamic Type Checking. **JavaScript Conditionals**: Introduction to Conditionals, Conditionals in JavaScript, Ternary Operators and Conditionals. Conditional Ladder & Switch statement. **JavaScript Arrays**: Introduction to Arrays, Declaring and Mutating Arrays, Array Methods and Properties, Replication with Array Methods, Multi-dimensional Arrays.	7
Unit-5	**JavaScript Loops**: Introduction to Loops, Loops in JavaScript, While and Do/While Loops, For Loops, Break and Continue in Loops, Iterating Arrays, Iterating Objects. **JavaScript Functions:** Introduction to Functions, Functions in JavaScript, Nested Functions in JavaScript, Arrow Functions in JavaScript, Function as an Argument, Function as the Returned Object, **JavaScript Scope:** Scope Introduction, Scope in JavaScript, Lexical	7

	Scope, Module Scope. Method of Adding Interactivity to a Web Page, Creating Dynamic Web Pages; Concept of Java Scripting the Forms. Java Scripting the Forms, Basic Script Construction, Talking to the Form Objects, Organizing the Objects and Scripts, Field-Level Validation, Check Required Fields like Validating Zip Code, Automated Formatting, Format Phone, Format Money, Automatic Calculation, Calculate Expiration Date, Calculate Amount etc	

Text Books, Reference Books, Other resources

1. Suggested Readings:

- Jon Duckett, HTML And CSS: Design And Build Websites, Wiley Jon Duckett, JavaScript And Jquery: Interactive Front-End Web Development, Wiley
- Jennifer Niederst Robbins, Learning Web Design: A Beginner's Guide To HTML, CSS, JavaScript, And Web Graphics, O'reilly
- Steven M. Schafer, Html, XHTML, And CSS Bible, Wiley Felke-Morris, Basics Of Web Design: Html5 & Css3, 5th Edition, Pearson Education, 2019. Felke-Morris, Web Development & Design Foundations With Html5, 10th Edition, Addison-
- Wesley, 2020.
- Ian Pouncey, Richard York, Beginning CSS: Cascading Style Sheets For Web Design, Wiley India.
- Thomas A Powell, The Complete Reference To Html
- 0 Lee Anne Philips, Using Html, PHI
- C. Xavier, World Wide Web Design With Html,
- Xavier C, Web Technology And Design, New Age International Laura Lemay, Mastering Html, CSS & JavaScript Web Publishing
- Dt Editorial Services, Html 5 Black Book - Covers CSS 3, JavaScript, XML, XHTML, AJAX, PHP and Jquery, DreamTech Press Publication