Department of Computer Application

Lesson Plan

Class –BCASem –I Course Code :- BCA-103 Nomenclature: Computers Fundamentals

Syllabus

UNIT-I

Introduction: Characteristics of Computers, Evolution of computers, Capabilities and limitations of computers, Generations of computers, Types of computers(micro, mini, main frame, supercomputers), Block diagram of computer, Basic components of a computer system0 Input unit, output unit, Arithmetic logic Unit, Control unit, central processing unit, Instruction set, registers, processor speed, type of processors.

UNIT-II

Memory: main memory organization, main memory capacity, RAM, ROM, EPROM, PROM, cache memory, PCs specifications.
Secondary Storage Devices- Magnetic Tape, Magnetic Disks0Internal Hard Disk, External Hard Drives, Floppy Disks, Optical Disks-CD, VCD, CD-R, CD-RW, DVD, Solid State Storage0Flash Memory, USB Drives.

UNIT-III

Input devices: Keyboard, Pointing Devices0mouse, Touch Screens, Joystick, Electronic pen, Trackball, Scanning Devices-Optical Scanners, OCR, OMR, Bar Code Readers, MICR, Digitizer, Electronic card reader, Image Capturing Devices-Digital Cameras.
Output devices- Monitors0 CRT, LCD/TFT, Printers- Dot matrix, Inkjet, Laser, Plotters- Drum, Flatbed, Screen image projector.

UNIT-IV

Computer Software: Software and its Need, Types of software0System software, Application software, System software0operating system, utility program, programming languages, assemblers, compilers and interpreter, introduction to operation system for PCs-DOS, windows, linux, file allocation table (FAT & FAT32), files & directory structure and its naming rules, programming languages0machine, assembly, high level, 4GL, their merits and demerits, application software and its types – word0processing, spreadsheet, presentation graphics

Text & Reference books:

1. Pradeep K. Sinha, Priti Sinha, "Computer Fundamentals". BPB Publications.
2. Rajaraman, V., "Fundamental of Computers". Prentice Hall India, New Delhi.

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of July and August	Characteristics of Computers, Evolution of computers, Capabilities and limitations of computers, Generations of computers, Types of computers(micro, mini, main frame, supercomputers), Block diagram of computer, Basic components of a computer system0 Input unit, output unit, Arithmetic logic Unit, Control unit, central processing unit, Instruction set, registers, processor speed, type of processors.	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources
2	September	Memory: main memory organization, main memory capacity, RAM, ROM, EPROM, PROM, cache memory, PCs specifications. Secondary Storage Devices-Magnetic Tape, Magnetic Disks0Internal Hard Disk, External Hard Drives, Floppy Disks, Optical Disks-CD, VCD, CD-R, CD-RW, DVD, Solid State Storage0Flash Memory, USB Drives.	16	------do----------
3	October	Input devices: Keyboard, Pointing Devices0mouse,	08	------do----------

		Touch Screens, Joystick, Electronic pen, Trackball, Scanning Devices-Optical Scanners, OCR, OMR, Bar Code Readers, MICR, Digitizer, Electronic card reader, Image Capturing Devices-Digital Cameras. Output devices- Monitors0 CRT, LCD/TFT, Printers- Dot matrix, Inkjet, Laser, Plotters- Drum, Flatbed, Screen image projector.		
4.	November	Computer Software: Software and its Need, Types of software0System software, Application software, System software0operating system, utility program, programming languages, assemblers, compilers and interpreter, introduction to operation system for PCs-DOS, windows, linux, file allocation table (FAT & FAT32), files & directory structure and its naming rules, programming languages0machine, assembly, high level, 4GL, their merits and demerits, application software and its types – word0processing, spreadsheet, presentation graphics	08	------do----------

Department of Computer Application

Lesson Plan

Class –BCA Sem –I Course Code: - BCA-104 Nomenclature: C Programming

Syllabus

UNIT-I

Introductory Concepts: Types of programming languages, Introduction to C, some simple C programs, Desirable program characteristics. C Fundamentals: C character Set, Identifiers and keywords, data types, constants, variables and arrays, Declarations, expressions, statements, Symbolic constants.

UNIT-II

Operators and expressions: Arithmetic operators, unary operator, Relational and logical operators, assignment operators, conditional operators, Library Functions. Data Input and Output: Preliminaries, singe character input, singe character output, Entering input data, writing output data, the gets() and puts() function.

UNIT-III

Control Statements: Preliminaries, Branching, Looping, Nested control statements, switch statement, break statement, The continue statement, The goto statement, The comma operator. Arrays: Defining an array, processing an array, passing arrays to functions, Multidimensional arrays, Arrays and strings.

UNIT-IV

Functions: A brief overview, Defining a function, accessing a function, function prototypes, passing arguments to a function, recursion. Pointers: Fundamentals, Pointer declarations, Passing pointers to the functions, pointers and one dimensional array, dynamic memory allocation, Operations on pointers, arrays of pointers.

Sr.no	Month	Topic	No. Of Lectures	Methods
1	Last week of July and August Month	Introductory Concepts: Types of programming languages, Introduction to C, some simple C programs, Desirable program characteristics. C Fundamentals: C character Set, Identifiers and keywords, data types, constants, variables and arrays, Declarations, expressions, statements, Symbolic constants. set, registers, processor speed,	16	Lecture Method through chalk & talk, slide presentation of various topics and providing e-resources

2	September	Operators and expressions: Arithmetic operators, unary operator, Relational and logical operators, assignment operators, conditional operators, Library Functions. Data Input and Output: Preliminaries, singe character input, singe character output, Entering input data, writing output data, the gets() and puts() function.	16	------do----------
3	October	Control Statements: Preliminaries, Branching, Looping, Nested control statements, switch statement, break statement, The continue statement, The goto statement, The comma operator. Arrays: Defining an array, processing an array, passing arrays to functions, Multidimensional arrays, Arrays and strings.	08	------do----------
4.	November	Functions: A brief overview, Defining a function, accessing a function, function prototypes, passing arguments to a function, recursion. Pointers: Fundamentals, Pointer declarations, Passing pointers to the functions, pointers and one dimensional array, dynamic memory allocation, Operations on pointers, arrays of pointers.	08	------do----------

Department of Computer Application

Lesson Plan

Class –BCA Sem –I Course Code: - BCA-105 Nomenclature: Office Automation Tools

Syllabus

UNIT-I

DOS commands: (internal (DIR, DATE, TIME, CLS, CD, RD, MD, PATH, TYPE, DEL, ECHO, COPY, REN, PROMPT, VOL, VER), external (ATTRIB, CHKDSK, DISKCOPY, DISKCOMP, XCOPY, TREE, DELTREE, DOSKEY, FORMAT, FIND, SORT, FDISK, MORE, SYS)), Concept of files & directories, Wild card characters, Redirection operators. Windows 2007: Definition, Benefits, Features & uses of Windows 2007, Control panel, Accessories, Task bar, My computer uses, Recycle bin.

UNIT-II

Common Office 2007: Elements, Introduction to Office 2007, Customizing the Office Environment, Managing Files in Office, Text Tools, Drawing and Graphics Tools. Word Processing: Definition, Benefits, Features & uses of Word 2007, Menus, Toolbars, Cursor control keys, Short cut keys, Hot keys, Editing Text, Document Formatting, Reusable formatting with Styles and Templates, File handling (opening, creating, saving, printing, editing), Formatting text, Find and replace, Tables and Columns, Advanced Page Layout in Word, Automating Information with Fields, Managing Long Documents, Spell check, Thesaurus, File protection, Mail Merge, Labels, and Envelopes, Macros.

UNIT-III

Spreadsheets: Definition, Benefits, Features & Uses of MS Excel 2007, Menus, Toolbars, Worksheets, Formatting Worksheets and Restricting Data, Calculating with Formulas and Functions, Ranges, Auto fill, Data (sort, filter, validation, subtotal), Viewing and Manipulating Data with charts and PivotTables, Print, Goal seek, Scenario, Macros, Creating Excel Databases.

UNIT-IV

Presentations: Definition, Benefits, Features & Uses of PowerPoint, Menus, Toolbars, Creating and Editing Slides, Adding graphics, Multimedia, and Special Effects to Slides, Insert (picture, slide, text), Master slide, Views, Animation, Action buttons, Macros.

Sr.no	Month	Topic	No. Of Lectures	Methods
1	Last week of July and August Month	DOS commands: (internal (DIR, DATE, TIME, CLS, CD, RD, MD, PATH, TYPE, DEL, ECHO, COPY, REN, PROMPT, VOL, VER), external (ATTRIB, CHKDSK,	16	Lecture Method through chalk & talk, slide presentation of various topics

		DISKCOPY, DISKCOMP, XCOPY, TREE, DELTREE, DOSKEY, FORMAT, FIND, SORT, FDISK, MORE, SYS)), Concept of files & directories, Wild card characters, Redirection operators. Windows 2007: Definition, Benefits, Features & uses of Windows 2007, Control panel, Accessories, Task bar, My computer uses, Recycle bin.		and providing e-resources
2	September	Spreadsheets: Definition, Benefits, Features & Uses of MS Excel 2007, Menus, Toolbars, Worksheets, Formatting Worksheets and Restricting Data, Calculating with Formulas and Functions, Ranges, Auto fill, Data (sort, filter, validation, subtotal), Viewing and Manipulating Data with charts and PivotTables, Print, Goal seek, Scenario, Macros, Creating Excel Databases.	16	------do----------
3	October	Presentations: Definition, Benefits, Features & Uses of PowerPoint, Menus, Toolbars, Creating and Editing Slides, Adding graphics, Multimedia, and Special Effects to Slides, Insert (picture, slide, text), Master slide, Views, Animation, Action buttons, Macros.	08	------do----------
4.	November	Common Office 2007: Elements, Introduction to Office 2007, Customizing the Office Environment, Managing Files in Office, Text Tools, Drawing and Graphics Tools. Word Processing: Definition,	08	------do----------

		Benefits, Features & uses of Word 2007, Menus, Toolbars, Cursor control keys, Short cut keys, Hot keys, Editing Text, Document Formatting, Reusable formatting with Styles and Templates, File handling (opening, creating, saving, printing, editing), Formatting text, Find and replace, Tables and Columns, Advanced Page Layout in Word, Automating Information with Fields, Managing Long Documents, Spell check, Thesaurus, File protection, Mail Merge, Labels, and Envelopes, Macros.		

Department of Computer Application

Lesson Plan

Class –BCA Sem –II Course Code :- BCA-204 Nomenclature: Data Structures

Syllabus

UNIT-I

Preliminaries: Concept & notation, common operation on data structures, algorithm complexity, time-space trade off between algorithm, physical & logical representation of different data structures. Arrays: Arrays defined, representing arrays in memory, Various operation (traversal, insertion, deletion), Multidimensional arrays, Sequential allocation, Address calculation.

UNIT-II

Linked List: Definition, type (linear, circular, doubly linked, inverted), representing linked lists in memory, advantages of using linked list over arrays, various operations on Linked list (traversal, insertion, deletion).

UNIT-III

Stacks: Definition & concepts of stack structure, Implementation of stacks, Operation on stacks (push & pop), Application of stacks (converting arithmetic expression from infix notation to polish and their subsequent evaluation), quick

sort technique to sort an array, recursion). Queue: Definition & concept of queues, implementation of queue, operation on queues (insert & delete), circular queue.

UNIT-IV

Trees Structures: Tree, Binary Trees, Tree Traversal Algorithms (Pre-Order, In-Order, Post-Order), Threaded Trees, Binary Search Trees. Sorting & Searching: Selection sort, Bubble sort, Merge sort, Radix sort, Quick sort, Sequential search, Linear search and their complexity

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of November and December	Preliminaries: Concept & notation, common operation on data structures, algorithm complexity, time-space trade off between algorithm, physical & logical representation of different data structures. Arrays: Arrays defined, representing arrays in memory, Various operation (traversal, insertion, deletion), Multidimensional arrays, Sequential allocation, Address calculation.	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources
2	February	Stacks: Definition & concepts of stack structure, Implementation of stacks, Operation on stacks (push & pop), Application of stacks (converting arithmetic expression from infix notation to polish and their subsequent evaluation), quick sort technique to sort an array, recursion). Queue: Definition & concept of queues, implementation of queue, operation on queues (insert & delete), circular queue.	16	------do----------
3	March	Linked List: Definition, type (linear, circular, doubly linked, inverted), representing linked lists in memory, advantages of using	08	------do----------

		linked list over arrays, various operations on Linked list (traversal, insertion, deletion).		
4.	April	Trees Structures: Tree, Binary Trees, Tree Traversal Algorithms (Pre-Order, In-Order, Post-Order), Threaded Trees, Binary Search Trees. Sorting & Searching: Selection sort, Bubble sort, Merge sort, Radix sort, Quick sort, Sequential search, Linear search and their complexity.	08	------do----------

Department of Computer Application

Lesson Plan

Class –BCA Sem –II Course Code :- BCA-205 Nomenclature: Database Management System

Syllabus

UNIT-I

Introduction To Database Concepts: Data Modeling for a Database, Fields, Records and Files, Abstraction and Data Integration, Database Architecture, Users, Structure of DBMS, Advantages and Disadvantages of DBMS.

Data Models: Entity, Attribute, Relationship, Data Model Classifications, File based, Traditional, Semantic, Entity0Relationship Model.

UNIT-II

File Organization: Operation on files, Sequential Files, Index-Sequential Files, Types of Indexes, Implicit, limit, multilevel, Direct Files, Indexing using B-Tree Structure.

Relational Model: Relational Database, Relational Algebra, Relational Calculus.

UNIT-III

Relational Database Design: Relational Scheme and Relational Design, Functional Dependency, Normal forms (First, Second, Third, Boyce Code), Decomposition and dependency preservation, Multi0valued dependency.

UNIT-IV

Ms Access: Tables (Creation/Design structure, Data Entry), Primary keys, Foreign Keys Master-Detail Table, Query (Select, Make-Table, Update, Append, Delete) Form (Modal, Modeless), Relationships Report (Creation of a simple report from a table and from a query).

Text & Reference Books:

1. Elmasri And Navathe, "Fundamentals of Database Systems", Benjamin/Cummings Publishing Co. Inc.
2. Bipin C. Desai, "An Introduction to Database Management System".
3. Users Reference Manuals Of Ms Access.
4. Date, C.J., "An Introduction to Database system", Narosa Publishing House.

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of November and December	Data Modeling for a Database, Fields, Records and Files, Abstraction and Data Integration, Database Architecture, Users, Structure of DBMS, Advantages and Disadvantages of DBMS. Data Models: Entity, Attribute, Relationship, Data Model Classifications, File based, Traditional, Semantic, Entity Relationship Model.	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources
2	February	File Organization: Operation on files, Sequential Files, Index-Sequential Files, Types of Indexes, Implicit, limit, multilevel, Direct Files, Indexing using B-Tree Structure. Relational Model: Relational Database, Relational Algebra,	16	------do----------

		Relational Calculus.		
3	March	Relational Database Design: Relational Scheme and Relational Design, Functional Dependency, Normal forms (First, Second, Third, Boyce Code), Decomposition and dependency preservation, Multi0valued dependency.	08	------do----------
4.	April	Ms Access: Tables (Creation/Design structure, Data Entry), Primary keys, Foreign Keys Master-Detail Table, Query (Select, Make-Table, Update, Append, Delete) Form (Modal, Modeless), Relationships Report (Creation of a simple report from a table and from a query).	08	------do----------

Department of Computer Application

Lesson Plan

Class –BCASem –III Course Code :- BCA-303 Nomenclature: Computer Organization

Syllabus

UNIT 1

Data representation: number systems, decimal to binary, octal and hexadecimal conversion and vice versa, binary coded decimal numbers, hamming code for error detection, alphanumeric codes, arithmetic operations, binary addition and subtraction, addition/subtraction of numbers in 1's and 2's complement notation for binary numbers and 9's and 10's complement notation for decimal numbers, binary multiplication and division, BCD arithmetic, floating point addition and subtraction.

UNIT II

Register Transfer Language: Register transfer, Bus and Memory transfer (three-stage bus buffers, memory transfer), arithmetic micro-operations (Binary Adder, Binary-adder-Substractor, binary incrementer, arithmetic circuit), Logic micro-operation (list op logic micro0operations, hardware implementation), shift micro0operations (hardware implementation), arithmetic logic shift unit.

UNIT III

Instruction codes: (stored program organization, indirect address), computer registers (common bus register), computer instructions (instruction set completeness), timing and control, instruction cycle (fetch and decode, types of instruction, register-reference instructions), Micro programmed control, control memory, addressing sequencing (conditional branching, mapping of instructions, subroutine)

UNIT IV

Central Processing Unit: Introduction, general register organization (control word, examples of micro-operations), stack organization (register stack, memory stack, reverse polish notation, evaluation of arithmetic expressions), instruction formats (three-address instructions, two address instructions, one0address instructions), addressing modes, data transfer and manipulation (data transfer instructions, data manipulation instructions, arithmetic instructions, logical and bit manipulation instructions, shift instructions), Program control (status bit conditions, conditional branch instructions, program interrupt, types of interrupt).

Text and reference books:

1. M.Morris Mano, "Computer System Architecture" 3rd edition, PHI.
2. V. Rajaraman, T. Radhakrishanan, "An Introduction to Digital Design", PHI
3. J.P.Hays, "Computer Organization and Architecture", McGraw Hill.

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of July and August	Data representation: number systems, decimal to binary, octal and hexadecimal conversion and vice versa, binary coded decimal numbers, hamming code for error detection, alphanumeric codes, arithmetic operations, binary addition and subtraction,	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources

		addition/subtraction of numbers in 1's and 2's complement notation for binary numbers and 9's and 10's complement notation for decimal numbers, binary multiplication and division, BCD arithmetic, floating point addition and subtraction		
2	September	Register Transfer Language: Register transfer, Bus and Memory transfer (three-stage bus buffers, memory transfer), arithmetic micro-operations (Binary Adder, Binary-adder-Substractor, binary incrementer, arithmetic circuit), Logic micro-operation (list op logic micro0operations, hardware implementation), shift micro0operations (hardware implementation), arithmetic logic shift unit	16	------do----------
3	October	Instruction codes: (stored program organization, indirect address), computer registers (common bus register), computer instructions (instruction set completeness), timing and control, instruction cycle (fetch and decode, types of instruction, register-reference instructions), Micro programmed control, control memory, addressing sequencing (conditional branching, mapping of instructions, subroutine)	08	------do----------
4.	November	Central Processing Unit: Introduction, general register	08	------do----------

		organization (control word, examples of micro-operations), stack organization (register stack, memory stack, reverse polish notation, evaluation of arithmetic expressions), instruction formats (three-address instructions, two address instructions, one0address instructions), addressing modes, data transfer and manipulation (data transfer instructions, data manipulation instructions, arithmetic instructions, logical and bit manipulation instructions, shift instructions), Program control (status bit conditions, conditional branch instructions, program interrupt, types of interrupt)		

Department of Computer Application

Lesson Plan

Class –BCA Sem –III Course Code :- BCA-304 Nomenclature: Object Oriented Programming with C++

UNIT 1

Object oriented programming: Need for OOP, object oriented approach, characteristics of OOP language- objects, classes, Inheritance, Reusability, Polymorphism, overloading advantage of OOP, relationship between C and C++. Programming Basic: Basic program construction, output using cout, preprocessor directive, comments, integer variables, character variables, input with cin, Type bool, setw Manipulator, type float, type conversion, arithmetic operators, relational operators, logical operators.

UNIT II

Loops and decision control statements: loop- for, while, do, decision-if, if- else, switch, conditional operator, other control statements- break, continue, goto. Structures and functions: structures, Accessing structure members, structure within a structure, Enumerated Data type, simple functions, passing arguments to functions, Returning values from functions, reference arguments, overloaded functions, storage classes, scope resolution operator.

UNIT III

Objects and classes: A simple class, classes and objects, specifying a class, using a class, C++ objects as physical objects, C++ objects as data types, Constructors, objects as function arguments, returning objects from functions. Arrays: Array fundamental0defining array, array elements, Accessing array elements, Initializing arrays, multidimensional arrays, passing arrays to functions, array of objects, strings-string variables, Avoiding Buffer overflow, string constants, array of strings string as class members, Standard C++ string Class.

UNIT IV

Operator overloading: Overloading unary operators- the operator keyword, operator arguments, operator return values nameless temporary objects, limitation of increment operators, overloading Binary operators, data conversion, Pitfalls of operator overloading and conversion. Inheritance: Derived class and base class, specifying the derived class, accessing base class, members, derived class constructors, overriding member functions, class hierarchies, public and private Inheritance, levels of inheritance, multiple inheritance, Ambiguity in Multiple Inheritance, Aggregation- Classes Within Classes.

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of July and August	Object oriented programming: Need for OOP, object oriented approach, characteristics of OOP language- objects, classes, Inheritance, Reusability, Polymorphism, overloading advantage of OOP, relationship between C and C++. Programming Basic: Basic program construction, output using cout, preprocessor directive, comments, integer variables, character variables, input with cin, Type bool, setw Manipulator, type float, type conversion, arithmetic	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources

		operators, relational operators, logical operators.		
2	September	Loops and decision control statements: loop- for, while, do, decision-if, if- else, switch, conditional operator, other control statements- break, continue, goto. Structures and functions: structures, Accessing structure members, structure within a structure, Enumerated Data type, simple functions, passing arguments to functions, Returning values from functions, reference arguments, overloaded functions, storage classes, scope resolution operator.	16	------do----------
3	October	Objects and classes: A simple class, classes and objects, specifying a class, using a class, C++ objects as physical objects, C++ objects as data types, Constructors, objects as function arguments, returning objects from functions. Arrays: Array fundamental0defining array, array elements, Accessing array elements, Initializing arrays, multidimensional arrays, passing arrays to functions, array of objects, strings-string variables, Avoiding Buffer overflow, string constants, array of strings string as class members, Standard C++ string Class.	08	------do----------
4.	November	Operator overloading: Overloading unary operators- the operator keyword, operator arguments, operator return values nameless temporary objects, limitation of increment operators,	08	------do----------

		overloading Binary operators, data conversion, Pitfalls of operator overloading and conversion. Inheritance: Derived class and base class, specifying the derived class, accessing base class, members, derived class constructors, overriding member functions, class hierarchies, public and private Inheritance, levels of inheritance, multiple inheritance, Ambiguity in Multiple Inheritance, Aggregation- Classes Within Classes.		

Department of Computer Application

Lesson Plan

Class –BCA Sem –IV Course Code :- BCA-403 Nomenclature: System Analysis and Design

Syllabus

UNIT-I

Overview of System Analysis and Design: Business System concepts, System development life cycle, Project Selection, Feasibility Analysis, Design, Limitation, testing and evaluation. Initial Investigation: Sources of Requests, User / Analyst interaction, Qualities of a System Analyst.

UNIT–II

Feasibility studies: Technical, Operational, Behavioral and economic feasibilities, cost and benefit analysis.

UNIT-III

System requirement specification and analysis: Fact finding techniques, Data Flow Diagrams, Data Dictionaries, process organization and interaction, Decision Analysis, Decision Trees and Tables. Top down and bottom up variance, Audit trails.

UNIT-IV

Detail Design: Modularization, module specification, file design, system development involving databases. System control and quality assurance: Design objectives reliability and maintenance, software design and documentation tools, unit and integration testing, testing practice and plans, system control.

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of November and December	Overview of System Analysis and Design: Business System concepts, System development life cycle, Project Selection, Feasibility Analysis, Design, Limitation, testing and evaluation. Initial Investigation: Sources of Requests, User / Analyst interaction, Qualities of a System Analyst.	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources
2	February	Feasibility studies: Technical, Operational, Behavioral and economic feasibilities, cost and benefit analysis.	16	------do----------
3	March	System requirement specification and analysis: Fact finding techniques, Data Flow Diagrams, Data Dictionaries, process organization and interaction, Decision Analysis, Decision Trees and Tables. Top down and bottom up variance, Audit trails.	08	------do----------
4.	April	Detail Design: Modularization, module specification, file design, system development involving databases. System control and quality assurance: Design objectives reliability and maintenance, software design and documentation tools, unit and integration testing,	08	------do----------

		testing practice and plans, system control.		

Department of Computer Application

Lesson Plan

Class –BCA Sem –IV Course Code :- BCA-404 Nomenclature: Internet Technology & Web Page Design

Syllabus

UNIT-I

Internet: Evolution of Internet, Internet Application, Network requirements, Bandwidth, Internet features (Electronic Mail, Newsgroups, FTP Archive, Real Time Activity, Video, Audio, Search Engine).

UNIT–II

World Wide Web: Definition, WWW Browsers, WWW Servers, Dial-Up SLIP, PPP Access, Dedicated line, ISDN.TCP/IP Connectivity- DNS Servers, Domain Names Registration process, IP addressing, Routing with TCP/IP Basics

UNIT-III

HTML: Text formatting, Data, Tables, Table layout, Images, HTML Interactivity, URLs, HTTP, NNTP, Hyperlinks, Menus & Image Maps, HTML Form, Embedded objects in HTML, Web Typography, Approaching Web Typography, Graphics and Type, Families and Faces, Type forms, Color and Type, Adding Graphics, Adding Graphics with the Image Element, Using images as links, Creating Image Maps, Working with Image Files, Layout Technology, Standard HTML Formatting, Tables, Frames,

UNIT-IV

CSS: Formatting your site with Cascading Style Sheets, Seeing Style Sheets in Action, Understanding CSSI's Advantages and Limitations, Making HTML and CSSI's, Making HTML and CSSI work together, Learning How CSSI Works, Using CSSI Properties. XML, XML Language, SMGL, Linking in XML.

Text & Reference Books:

1. Internet Get Started: BPB Publications.
2. Loren Buhle, "Webmaster Professional Reference", New Riders Publishing.
3. Rick Darnell "HTML 4", Techmedia.

4. Tauber, “Mastering Front Page 2000” BPB.
5. James Jaworski, “Making Java Script and JSCRIPT”, BPB Publications.
6. HTML Complete: BPB Publisher.

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of November and December	Internet: Evolution of Internet, Internet Application, Network requirements, Bandwidth, Internet features (Electronic Mail, Newsgroups, FTP Archive, Real Time Activity, Video, Audio, Search Engine).	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources
2	February	World Wide Web: Definition, WWW Browsers, WWW Servers, Dial-Up SLIP, PPP Access, Dedicated line, ISDN.TCP/IP Connectivity-DNS Servers, Domain Names Registration process, IP addressing, Routing with TCP/IP Basics	16	------do----------
3	March	HTML: Text formatting, Data, Tables, Table layout, Images, HTML Interactivity, URLs, HTTP, NNTP, Hyperlinks, Menus & Image Maps, HTML Form, Embedded objects in HTML, Web Typography, Approaching Web Typography, Graphics and Type, Families and Faces, Type forms, Color and Type,	08	------do----------

		Adding Graphics, Adding Graphics with the Image Element, Using images as links, Creating Image Maps, Working with Image Files, Layout Technology, Standard HTML Formatting, Tables, Frames		
4.	April	CSS: Formatting your site with Cascading Style Sheets, Seeing Style Sheets in Action, Understanding CSSI's Advantages and Limitations, Making HTML and CSSI's, Making HTML and CSSI work together, Learning How CSSI Works, Using CSSI Properties. XML, XML Language, SMGL, Linking in XML. Report (Creation of a simple report from a table and from a query).	08	------do----------

Department of Computer Application

Lesson Plan

Class –BCA Sem –IV Course Code :- BCA-405 Nomenclature: Programming in Visual Basic Syllabus

UNIT-I

Introduction to Visual Studio: Features of Visual basic, Visual Basic applications, compile, run, Difference between Visual Basic and .NET languages. Open, close existing project, possible menu variations, use the Form Designer, Code Editor, Solution Explorer, work with Visual Studio's windows. Design a form: Add controls to a form, Set properties, common properties for forms and controls, add navigation features, property settings, use Document Outline view, name and save files of a project, Design and property settings for the form, Refer to properties, methods, events, Add code to a form, create an event handler for the default event of a form or control, code with a readable style, code comments, detect and correct syntax errors. Use the toolbar buttons, collapse or expand code, print source code,

code snippets, Smart Compile Auto Correction feature, My feature and debug a project.

UNIT-II

Work with numeric and string data: Work with the built-in value types- Declare and initialize variables, declare and initialize constants, code arithmetic expressions, code assignment statements, work with the order of precedence, use casting, change the type semantics, work with strings, declare and initialize a string, join and append strings. Data types, use Visual Basic functions to convert data types, use methods to convert data types, formatting functions, use methods to convert numbers to formatted strings, Code control structures: Code Boolean expressions, relational operators, logical operators, conditional statements, If statements, Select Case statements, loops, For loops, Do loops, use Exit and Continue statements, Debugging techniques for programs with loops.

UNIT-III

Code procedures and event handlers: Code and call procedures- Sub procedures, call Sub procedures, pass arguments by reference and by value, code and call Function procedures, work with events, start an event handler for any event, handle multiple events with one event handler, use the Code Editor to start an event handler, add and remove event writing. The Function procedure, event handlers, Message box Handle exceptions and validate data: Introduction to data validation and exception handling, use the IsNumeric function, display a dialog box for error messages, exception handling works, Use structured 34 exception handling, catch an exception, properties and methods of an exception, throw an exception, application with exception handling. Validate data: Validate a single entry, use generic procedures to validate an entry, validate multiple entries, application with data validation, dialog boxes, code, Difference between Validating event and masked text box.

UNIT-IV

Arrays and collections: one-dimensional arrays, create an array, assign values to the elements of an array, use For loops to work with arrays, use For Each loops to work with arrays, work with rectangular arrays, create a rectangular array, assign values to a rectangular array, work with rectangular arrays, create a jagged array, assign values to a jagged array, work with jagged arrays, use the Array class, refer to and copy arrays, code procedures that work with arrays, Work with list, sorted list, queues, stacks, array list. Dates and strings: create a DateTime value, get the current date & time, format DateTime values, perform operations on dates and times, work with strings, procedures for validating user entries, Format numbers, dates, and times, Format numbers. Types of controls, combo boxes, list boxes, check boxes, radio buttons, group boxes, use Tab Order view to set the tab order. Multi0form projects: Add a form to a project, rename a form, change the startup form for a project, display a form as a dialog box, pass data between a form and a custom dialog box, Use the MessageBox0 Display a dialog box and get the user response, use the FormClosing event. Debug an application: set the debugging options, break mode, use the Edit Continue feature, breakpoints, debugging windows, Locals window to monitor variables, use the Autos window to monitor variables, Watch windows to monitor expressions, Call Stack window to monitor called procedures, Output window to get build or debugging information.

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of November and December	Introduction to Visual Studio: Features of Visual basic, Visual Basic applications, compile, run, Difference between Visual Basic and .NET languages. Open, close existing project, possible menu variations, use the Form Designer, Code Editor, Solution Explorer, work with Visual Studio's windows. Design a form: Add controls to a form, Set properties, common properties for forms and controls, add navigation features, property settings, use Document Outline view, name and save files of a project, Design and property settings for the form, Refer to properties, methods, events, Add code to a form, create an event handler for the default event of a form or control, code with a readable style, code comments, detect and correct syntax errors. Use the toolbar buttons, collapse or expand code, print source code, code snippets, Smart Compile Auto Correction feature, My feature and debug a project.	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources
2	February	Work with numeric and string data: Work with the built-in value types- Declare and initialize variables, declare and initialize constants, code arithmetic expressions, code assignment statements, work	16	------do----------

		with the order of precedence, use casting, change the type semantics, work with strings, declare and initialize a string, join and append strings. Data types, use Visual Basic functions to convert data types, use methods to convert data types, formatting functions, use methods to convert numbers to formatted strings, Code control structures: Code Boolean expressions, relational operators, logical operators, conditional statements, If statements, Select Case statements, loops, For loops, Do loops, use Exit and Continue statements, Debugging techniques for programs with loops.		
3	March	Code procedures and event handlers: Code and call procedures- Sub procedures, call Sub procedures, pass arguments by reference and by value, code and call Function procedures, work with events, start an event handler for any event, handle multiple events with one event handler, use the Code Editor to start an event handler, add and remove event writing. The Function procedure, event handlers, Message box Handle exceptions and validate data: Introduction to data validation and exception handling, use the IsNumeric function, display a dialog box for error messages, exception handling works, Use structured 34 exception handling, catch an exception,	08	------do----------

		properties and methods of an exception, throw an exception, application with exception handling. Validate data: Validate a single entry, use generic procedures to validate an entry, validate multiple entries, application with data validation, dialog boxes, code, Difference between Validating event and masked text box.		
4.	April	Arrays and collections: one-dimensional arrays, create an array, assign values to the elements of an array, use For loops to work with arrays, use For Each loops to work with arrays, work with rectangular arrays, create a rectangular array, assign values to a rectangular array, work with rectangular arrays, create a jagged array, assign values to a jagged array, work with jagged arrays, use the Array class, refer to and copy arrays, code procedures that work with arrays, Work with list, sorted list, queues, stacks, array list. Dates and strings: create a DateTime value, get the current date & time, format DateTime values, perform operations on dates and times, work with strings, procedures for validating user entries, Format numbers, dates, and times, Format numbers. Types of controls, combo boxes, list boxes, check boxes, radio buttons, group boxes, use Tab Order view to set the tab order. Multi0form projects: Add a form to a project, rename a form, change the	08	------do----------

		startup form for a project, display a form as a dialog box, pass data between a form and a custom dialog box, Use the MessageBox0 Display a dialog box and get the user response, use the FormClosing event. Debug an application: set the debugging options, break mode, use the Edit Continue feature, breakpoints, debugging windows, Locals window to monitor variables, use the Autos window to monitor variables, Watch windows to monitor expressions, Call Stack window to monitor called procedures, Output window to get build or debugging information.		

Department of Computer Application

Lesson Plan

Class –BCASem –V Course Code :- BCA-501 Nomenclature: Operating System

Syllabus

UNIT 1

Operating System Concepts: Operating System Classification- Simple Monitor, Multi Programming, Time Sharing, Real Time Systems, Multiprocessor Systems, Batch Processing, Simple User, Multi User, Operating System Functions And Characteristics.

UNIT II

Processor Management: Process Overview, Process States, Process State Transitions, Process Control Block, Operations On Processes, Suspend And Resume, Interrupt Processing, Scheduling Algorithms, Multiple Processor Scheduling. Deadlock: Deadlock Problem, Deadlock, Deadlock Characterization, Necessary Conditions, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery From Deadlock.

UNIT III

Memory Management: Partition, Paging, Segmentation, Types Of Memory Management Scheme , Bare Machine, Resident Monitor, Swapping, Multiple Partition, Virtual Memory, Demand Paging

UNIT IV

File Management: File Types, Operation On Files, File Support, Access Methods, Sequential Access, Direct Access, Index, Allocation Method (Free Space Management, Contiguous, Linked, Indexed), Directory System Single-Level, Two-Level, TreeStructured, File Protection.

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of July and August	Operating System Concepts: Operating System Classification- Simple Monitor, Multi Programming, Time Sharing, Real Time Systems, Multiprocessor Systems, Batch Processing, Simple User, Multi User, Operating System Functions And Characteristics.	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources
2	September	Processor Management: Process Overview, Process States, Process State Transitions, Process Control Block, Operations On Processes, Suspend And Resume, Interrupt Processing, Scheduling Algorithms, Multiple Processor Scheduling. Deadlock: Deadlock Problem, Deadlock, Deadlock Characterization, Necessary Conditions, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery From Deadlock.	16	------do----------
3	October	Memory Management: Partition, Paging, Segmentation, Types Of Memory Management	08	------do----------

		Scheme , Bare Machine, Resident Monitor, Swapping, Multiple Partition, Virtual Memory, Demand Paging.		
4.	November	File Management: File Types, Operation On Files, File Support, Access Methods, Sequential Access, Direct Access, Index, Allocation Method (Free Space Management, Contiguous, Linked, Indexed), Directory System Single-Level, Two-Level, TreeStructured, File Protection.	08	------do----------

Department of Computer Application

Lesson Plan

Class –BCA Sem –V Course Code :- BCA-504 Nomenclature: ASP.Net Technologies

Syllabus

UNIT 1

Introducing .NET: Microsoft web development, Move from workstation to distributed computing, Internet factor, importance of.net platform0 OS neutral environment, device independence, wide language support, internet based component services. .NET framework: Common language runtime(CLR), code management and execution, security support, error handling and garbage collection,.net framework class libraries0System classes, data and XML classes, windows form and drawing classes, web classes. Features of .NET framework: ASP.NET web forms and web services0 Web page authoring & server controls, ASP.NET infrastructure.

UNIT II

VB.NET : Introduction, statement, lines, comments, operators, procedures, variables0 implicit, explicit, constants, parameters, arrays, branching, looping, objects, classes, inheritance, accessibility of inherited properties and methods, overriding methods. System class, working with numbers, manipulating strings, DateTime arithmetic, converting values, formatting values, managing arrays. Namespace and assemblies, Relating namespaces and DLL assemblies, creating assemblies, importing assemblies, using imported assemblies, compiling with imported namespace.

UNIT III

ASP.NET Web Forms: Web forms code model, In-page vs. Code0behind format, web form object life cycle, handling client side events on the server, web form event handling, define and respond web form control events, AutoPostBack property, automatic state management with web forms. HTML sever control: definition, RunAt sever attribute, HTML control class, General controls-Anchor, image, form, division, span, Table control, Input Control. Web server Control: Web Control class, General control- Hyperlink, link button, image, label, Panel, Form Controls, Table controls.

UNIT IV

Web form List Control: Simple List controls, Template List controls. Validation Controls: Definition, properties and methods of validation controls, validation controls 0 RequiredFieldValidator, CompareValidator, RangeValidator, RegularExpressionValidator, CustomValidator, ValidationSummary. User Controls: Definition, Markup0Only User Control, Custom properties, handling events and loading user controls dynamically

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of July and August	Introducing .NET: Microsoft web development, Move from workstation to distributed computing, Internet factor, importance of.net platform0 OS neutral environment, device independence, wide language support, internet based component services. .NET framework: Common language runtime(CLR), code management and execution, security support, error handling and garbage collection,.net framework class libraries0System classes, data and XML	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources

		classes, windows form and drawing classes, web classes. Features of .NET framework: ASP.NET web forms and web services0 Web page authoring & server controls, ASP.NET infrastructure.		
2	September	VB.NET : Introduction, statement, lines, comments, operators, procedures, variables0 implicit, explicit, constants, parameters, arrays, branching, looping, objects, classes, inheritance, accessibility of inherited properties and methods, overriding methods. System class, working with numbers, manipulating strings, DateTime arithmetic, converting values, formatting values, managing arrays. Namespace and assemblies, Relating namespaces and DLL assemblies, creating assemblies, importing assemblies, using imported assemblies, compiling with imported namespace.	16	------do----------
3	October	ASP.NET Web Forms: Web forms code model, In-page vs. Code0behind format, web form object life cycle, handling client side events on the server, web form event handling, define and respond web form control events, AutoPostBack property, automatic state management with web forms. HTML sever control: definition, RunAt sever attribute, HTML control class, General controls- Anchor, image, form, division, span, Table control, Input Control. Web server Control: Web Control class,	08	------do----------

		General control- Hyperlink, link button, image, label, Panel, Form Controls, Table controls.		
4.	November	Web form List Control: Simple List controls, Template List controls. Validation Controls: Definition, properties and methods of validation controls, validation controls RequiredFieldValidator, CompareValidator, RangeValidator, RegularExpressionValidator, CustomValidator, ValidationSummary. User Controls: Definition, Markup Only User Control, Custom properties, handling events and loading user controls dynamically.	08	------do----------

Department of Computer Application

Lesson Plan

Class –BCA Sem –IV Course Code :- BCA-601 Nomenclature: Computer Networks

Syllabus

UNIT-I

Introduction to Communication Network: Computer Networks, (Need, uses, and Advantages of Computer Network), Network Models (Peer0to0Peer0Network, Server0based Network, Client0Server Network), Network components, Network Topology (Star, Ring, Bus, Mesh, Tree, Hybrid, Advantage and Disadvantage of each types.), Types of Networks (LAN, MAN, WAN), Internet (Brief History, Internet Today, Protocol and Standard .

UNIT-II

Error Detection and Correction: Types of errors (Single–bit0error, Burst0Error), Error Detection (Redundancy, Parity check, CRC, Checksum), Error correction (FEC, Hamming code, Burst error corrections) Data Communication Channel and Media,

Conductive Media (Twisted-pair cable, Coaxial cable), Fiber optics (Characteristic of light, Types of Fiber optics), Wireless Transmission, (Microwaves, Infrared, Radio waves).

UNIT-III

OSI Reference Model: OSI Model, OSI Physical Layer Concepts, DLL, Network Layer, TL, SL, PL and AL Concepts. Internet model / TCP/IP Model and Protocols, Modem, DSL, Cable Modem, ISDN, Real world network (Ethernet, Ethernet operation, frame format, Ethernet characteristic, cabling and components) Token Ring and Token Bus networking Technology. Network Connectivity, Repeater, Hub-(Active, Passive and Intelligent), Bridge0(Local, Remote and wireless), Routers (Static and Dynamic), switches and types of switches, Brouter and Gateways.

UNIT-IV

TCP/IP Protocol: Protocol Suite, Internet Architecture Board, TCP/IP Protocol (TCP,UDP,IP,ARD), concept of Physical Addressing, and logical Addressing, Different Classes of IP addressing, Special IP Addressing, Classful Addressing, Sub netting, Super netting, Classless addressing, TCP/IP Service Protocol (FTP,SMTP, TELNET, DNS).

Text & Reference Books:

1. Andrew S. Tahanbaum, Computer Network, PHI.
2. Behrowz A. Forouzan , Data Communication and Networking, Tata MacGraw Hill.
3. Ata Elahi, Mehran Elahi, “Data, Network and Internal communication Technology”, Cengage Learning India

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of November and December	Computer Networks, (Need, uses, and Advantages of Computer Network), Network Models (Peer0to0Peer0Network, Server0based Network, Client0Server Network), Network components, Network Topology (Star, Ring, Bus, Mesh, Tree,	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources

		Hybrid, Advantage and Disadvantage of each types.), Types of Networks (LAN, MAN, WAN), Internet (Brief History, Internet Today, Protocol and Standard		
2	February	Error Detection and Correction: Types of errors (Single–bit0error, Burst0Error), Error Detection (Redundancy, Parity check, CRC, Checksum), Error correction (FEC, Hamming code, Burst error corrections) Data Communication Channel and Media, Conductive Media (Twisted-pair cable, Coaxial cable), Fiber optics (Characteristic of light, Types of Fiber optics), Wireless Transmission, (Microwaves, Infrared, Radio waves).	16	------do----------
3	March	OSI Reference Model: OSI Model, OSI Physical Layer Concepts, DLL, Network Layer, TL, SL, PL and AL Concepts. Internet model / TCP/IP Model and Protocols, Modem, DSL, Cable Modem, ISDN, Real world network (Ethernet, Ethernet operation, frame format, Ethernet characteristic, cabling and components) Token Ring and Token Bus networking Technology. Network Connectivity, Repeater, Hub-(Active, Passive and Intelligent), Bridge0(Local, Remote and wireless), Routers (Static and Dynamic),	08	------do----------

		switches and types of switches, Brouter and Gateways.		
4.	April	TCP/IP Protocol: Protocol Suite, Internet Architecture Board, TCP/IP Protocol (TCP,UDP,IP,ARD), concept of Physical Addressing, and logical Addressing, Different Classes of IP addressing, Special IP Addressing, Classful Addressing, Sub netting, Super netting, Classless addressing, TCP/IP Service Protocol (FTP,SMTP, TELNET, DNS).	08	------do----------

Department of Computer Application

Lesson Plan

Class –BCA Sem –VI Course Code :- BCA-603 Nomenclature: Multimedia Technology

Syllabus

UNIT-I

Introduction to Multimedia : Needs and areas of use, Development platforms for multimedia, Identifying Multimedia elements Text, Images, Sound, Animation and Video, Making simple Multimedia with PowerPoint. Concepts of plain & formatted text, RTF & HTML texts, Object Linking and Embedding concept.

UNIT–II

Sound: Sound and it Attributes, Mono V/S Stereo Sound, Sound Channels, Sound and Its Effect In Multimedia, Analog V/S Digital Sound, Overview Of Various Sound File Formats On PC WAV, MP3.

UNIT-III

Graphics: Importance of Graphics in Multimedia, Vector and Raster Graphics, Image Capturing Methods Scanner, Digital Camera Etc. Various Attributes of Images Size, Color, Depth , Resolution etc, Various Image File Format BMP, DIB, EPS, PIC, and TIF Format Their Features and imitations, Basics of animation, Software Tools for animation.

UNIT-IV

Video: Basics of Video Analog and Digital Video, How to use video on PC. Introduction to graphics accelerator cards, Brief note on various video standards NTSC, HDTV, Introduction to video capturing Media & instrument Videodisk. Virtual Reality Terminology Head Mounts Display (HMD), Boom, Cave, Input Devices and Sensual Technology

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of November and December	Introduction to Multimedia : Needs and areas of use, Development platforms for multimedia, Identifying Multimedia elements Text, Images, Sound, Animation and Video, Making simple Multimedia with PowerPoint. Concepts of plain & formatted text, RTF & HTML texts, Object Linking and Embedding concept.	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources
2	February	Sound: Sound and it Attributes, Mono V/S Stereo Sound, Sound Channels, Sound and Its Effect In Multimedia, Analog V/S Digital Sound, Overview Of Various Sound File Formats On PC WAV, MP3.	16	------do----------
3	March	Graphics: Importance of Graphics in Multimedia, Vector and Raster Graphics, Image Capturing Methods Scanner, Digital Camera Etc. Various Attributes of Images Size, Color, Depth , Resolution etc, Various Image File Format BMP, DIB, EPS, PIC, and TIF Format Their Features and imitations, Basics of animation, Software Tools for animation.	08	------do----------
4.	April	Video: Basics of Video Analog	08	------do----------

		and Digital Video, How to use video on PC. Introduction to graphics accelerator cards, Brief note on various video standards NTSC, HDTV, Introduction to video capturing Media & instrument Videodisk. Virtual Reality Terminology Head Mounts Display (HMD), Boom, Cave, Input Devices and Sensual Technology		

Department of Computer Application

Lesson Plan

Class –BCA Sem –VI Course Code :- BCA-604 Nomenclature: Computer Graphics

Syllabus

UNIT-I

Introduction: Definition Of Computer Graphics And Its Applications, Video Display Devices, Raster Scan Displays, Random Scan Displays, Color CRT Monitors, Direct View Storage Tubes, Flat Panel Displays. Input Devices: Keyboard, Mouse, Trackball and Spaceball, Joysticks, Digitizers, Image Scanners, Touch Panels, Light Pens, Voice Systems.

UNIT-II

Output Primitives: Line Drawing Algorithms (DDA, Bresenhaum's), Circle Generating Algorithm(Midpoint Circle Drawing Algorithm), Ellipse Generating Algorithm, Midpoint Ellipse Generating Algorithm, Character Generation.

UNIT-III

2D Transformations: Translation, Rotation, Scaling, Reflection, Shear, Composite Transformation0Translation, Rotations, Scaling. Two Dimensional Viewing: Window-To-Viewport Coordinate Transformation

UNIT-IV

Clipping: Introduction, Clipping Operations, Point Clipping, Line Clipping(Cohen-Sutherland Line Clipping, Liang-Barsky Line Clipping, Nicholl-Lee-Nicholl Line

Clipping), Polygon Clipping(SutherlandHodgeman Polygon Clipping, Weiler-Atherton Polygon Clipping), Curve Clipping, Text Clipping.

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of November and December	Introduction: Definition Of Computer Graphics And Its Applications, Video Display Devices, Raster Scan Displays, Random Scan Displays, Color CRT Monitors, Direct View Storage Tubes, Flat Panel Displays. Input Devices: Keyboard, Mouse, Trackball and Spaceball, Joysticks, Digitizers, Image Scanners, Touch Panels, Light Pens, Voice Systems.	16	Lecture Method through chalk & talk , slide presentation of various topics and providing e-resources
2	February	Output Primitives: Line Drawing Algorithms (DDA, Bresenhaum's),Circle GeneratingAlgorithm(Midpoint Circle Drawing Algorithm), Ellipse Generating Algorithm, Midpoint Ellipse Generating Algorithm, Character Generation.	16	------do----------
3	March	2D Transformations: Translation, Rotation, Scaling, Reflection, Shear, Composite Transformation0Translation, Rotations, Scaling. Two Dimensional Viewing: Window-To-Viewport Coordinate Transformation	08	------do----------
4.	April	Clipping: Introduction, Clipping Operations, Point Clipping, Line Clipping(Cohen-Sutherland Line Clipping, Liang-Barsky Line Clipping, Nicholl-Lee-Nicholl Line Clipping), Polygon Clipping(SutherlandHodgeman Polygon Clipping, Weiler-	08	------do----------

		Atherton Polygon Clipping), Curve Clipping, Text Clipping.		

Department of Computer Application

Lesson Plan(

Class –BCA Sem –VI Course Code :- BCA-605 Nomenclature: Software Engineering

Syllabus

UNIT-I

Software engineering: Evolving Role of Software, Software Engineering, Changing nature of Software, Software Myths, Terminologies, Role of management in software development Software Process and desired Characteristics. Software Life Cycle Models: Build & Fix Model, Water Fall Model, Incremental Process Model, Evolutionary Process Models, Unified Process, Comparison of Models, Other Software Processes, Selection of a Model.

UNIT-II

Software Requirements Analysis & Specifications: Requirements Engineering, Types of Requirements, Feasibility Studies, Requirements Elicitation, Requirements Analysis Documentation, Validation and Management. Software Architecture: Its Role, Views, Component & Connector View and its architecture style, Architecture Vs Design, Deployment View & Performance Analysis, Documentation, Evaluation.

UNIT-III

Function Oriented Design: Design principles, Module level Concepts, Notation & Specification, Structured Design Methodology, Verification Object0Oriented Design: OO Analysis & Design, OO Concepts, Design Concepts, UML – Class Diagram, Sequence & Collaboration Diagram, Other diagrams & Capabilities, Design Methodology , Dynamic and Functional Modeling, Internal Classes & Operations.

UNIT-IV

Detailed Design: PDL, Logic/Algorithm Design, State Modeling of Classes, Verification: Design Walkthroughs, Critical Design Review, Consistency Checkers. Coding: Programming Principles & Guidelines, Coding Process, Refactoring, Verification.

Sno	Month	Topic	No. Of Lectures	Methods
1	Last week of November and December	Software engineering: Evolving Role of Software, Software Engineering,	16	Lecture Method through chalk & talk , slide

		Changing nature of Software, Software Myths, Terminologies, Role of management in software development Software Process and desired Characteristics. Software Life Cycle Models: Build & Fix Model, Water Fall Model, Incremental Process Model, Evolutionary Process Models, Unified Process, Comparison of Models, Other Software Processes, Selection of a Model.		presentation of various topics and providing e-resources
2	February	Software Requirements Analysis & Specifications: Requirements Engineering, Types of Requirements, Feasibility Studies, Requirements Elicitation, Requirements Analysis Documentation, Validation and Management. Software Architecture: Its Role, Views, Component & Connector View and its architecture style, Architecture Vs Design, Deployment View & Performance Analysis, Documentation, Evaluation.	16	------do----------
3	March	Function Oriented Design: Design principles, Module level Concepts, Notation & Specification, Structured Design Methodology, Verification Object0Oriented Design: OO Analysis & Design, OO Concepts, Design Concepts, UML – Class Diagram, Sequence & Collaboration Diagram, Other diagrams & Capabilities, Design Methodology , Dynamic and Functional Modeling, Internal Classes &	08	------do----------

		Operations.		
4.	April	Detailed Design: PDL, Logic/Algorithm Design, State Modeling of Classes, Verification: Design Walkthroughs, Critical Design Review, Consistency Checkers. Coding: Programming Principles & Guidelines, Coding Process, Refactoring, Verification.	08	------do----------

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