Course Code	Allied	T/P	C	H/W
22BCEA1	**MS Office**	**T**	**3**	**3**

Objectives	To understand the basic concepts of Windows operating system. To enable the students in crafting professional word documents, excel spread sheets, power point presentations using the Microsoft suite of office tools.
Unit –I	**MS Windows** – Concepts – Features – Windows Structure – Desktop – Taskbar – Start Menu– My Computer My Pictures – My music – Working with Recycle Bin – Managing files and folders: exploring hard disk – creating new folder, searching files and folders – disk –navigating between folders – coping and moving files and folder from one drive to another –Windows Accessories – calculator – Notepad – Paint – Word pad – Character Map: Windows Explorer: exploring hard disk, coping and moving files and folder from one drive to another Entertainment, Installation of Hardware and Software, Using scanner, system tools, communication, sharing information between computers.
Unit – II	**MS Word:** Introduction to MS Office – Features & area of use – Starting Word – Parts of Word Window – Mouse operations – Keyboard operations – Menus & Commands – Toolbars and their icons – Shortcut Menus – Wizards and Templates – Creating a New Document – Different Page Views and layouts – Applying various Text Enhancements; Working with – Styles, Text Attributes; Paragraph and Page Formatting; Text Editing using various features; Bullets, Numbering, Autoformatting, Printing & various print options **Advanced Features:** Spell Check, Thesaurus, Find & Replace; Headers & Footers; Inserting– Page Numbers, Pictures, Files, Autotexts, Symbols etc.; Working with Columns, Tabs & Indents; Creation & Working with Tables including conversion to and from text; Margins & Space management in Document; Mail Merge, Envelops & Mailing Labels.
Unit – III	**MS Excel:** Introduction – area of use – Concepts of Workbook & Worksheets: Using Wizards; Various Data Types – Using different features with Data, Cell and Texts: Selecting cells – Selecting cells with mouse – Entering and Editing text – Entering numbers, formulas and dates – Text alignment – Inserting, Removing & Resizing of Columns & Rows; Working with Data & Ranges; Different Views of Worksheets; Column Freezing, Labels, Hiding, Splitting etc.; Use of Formulas, Calculations & Functions; Cell Formatting including Borders & Shading; Working with Different Chart Types; Printing of Workbook & Worksheets with various options.
Unit – IV	**MS PowerPoint:** Introduction & area of use – Creating a New Presentation; Opening – Saving – Closing – Working with Presentation Using Wizards; Slides & its different views: Creating, Inserting, Deleting and Copying of Slides; Menus: File – Edit – View – Insert – Format – Tools – Slide Show – Window – Help – Working with Notes, Handouts, Columns & Lists; Adding Graphics, Sounds and Movies to a Slide; Printing Presentations, Notes, Handouts with print options.
Unit – V	**MS Access:** Introduction – Parts of an Access Window – Starting MS Access – Database Creation – Table Creation using Table Wizard – Table Creation using Design view – Saving Database – Query – Form – Reports

Books for Reference:

Windows XP Complete Reference. BPB Publications

MS Office XP complete BPB publication

MS Office 2000 by Sanjay Saxena, Vikas publishing house pvt Ltd.

MS Windows XP Home edition complete, BPB Publications

I.T. Tools and Applications, A. Mansoor, Pragya Publications

Outcomes	➢ Students will able to understand the concept of Windows operating system ➢ Students will able to work with office automation tools.

Course Code	Allied	T/P	C	H/W
22BCEAP1	**MS-Office -Lab**	**P**	**2**	**2**

Objectives	To understand the concepts of office automation tools To know about formatting the text using tools and how to access the database.
MS-WORD	1. Working with Files – Creating and opening documents, Saving documents, Renaming documents, working on multiple documents. 2. Working with Text – Formatting, Moving, copying and pasting text 3. Styles – Apply a style, Apply from the Style dialog box, Create a new style from a model, Modify or rename a style, Delete style. 4. Lists – Bulleted and numbered lists, Nested lists, Formatting lists 5. Table Manipulations. 6. Graphics – Adding clip Art, Add an image from a file, Editing a graphic 7. Spelling and Grammar, AutoCorrect 8. Page formatting – Page margins, page size and orientation, Header and footers, page numbers 9. Mail Merge. 10. Macros – Recording a macro, Running a macro 11. Web wizard – Using the Web Wizard, Creating & Saving web pages, Hyper links.
MS-EXCEL	1. Modifying a Worksheet – Moving through cells, Adding worksheets, rows and columns, Resizing rows and columns, Selecting cells, Moving and copying cells, Freezing panes 2. Macros – recording and running. 3. Formatting cells – Formatting toolbar, Dates and times, Auto formatting. 4. Formula and Functions. 5. Linking worksheets – Relative, absolute and mixed referencing 6. Sorting and Filling – Basic ascending and descending sorted, Complex sorts, Alternating text and numbers with Auto fill, Autofilling functions. 7. Graphics – Adding clip art, add an image from a file 8. Charts – Using chart Wizard, Copy a chart to Microsoft Word
MS-POWER POINT	1. Create a Presentation from a template. 2. Working with Slides-Insert a new slide, Applying a design template, Changing slide layouts, Reordering slides, Hide slides, Create a Custom slide show 7 edit. 3. Adding Content – Resizing a text box, Text box properties, Delete a text box. 4. Video and Audio effects. 5. Color Schemes & Backgrounds 6. Adding clip art, Adding an image from a file 7. Save as a web page.
MS-ACCESS	1. Using Access database wizard, pages and projects. 2. Open an existing database, converting to Access 2000 3. Screen Layouts – Database window, Design view, Datasheet view 4. Creating Tables – Create a Table in design view, Primary key, Indexes, Field validation rules. 5. Datasheet Records – Adding, Editing, Deleting records, Adding and deleting columns & Resizing rows and columns, Finding data in a table & replacing, Print a datasheet. 6. Declaring Table Relationships. 7. Sorting and Filtering – Sorting, Filter by selection, by form, saving & removing a filter.

	8. Queries – Create a query in design view, Query Wizard, Find duplicates query ,Delete 9. Forms – Create a form using the wizard, Create a form in Design View. 10. Form Controls. 11. Sub forms – Create a form and sub form at once, Sub form wizard, Drag and drop method. 12. Reports – Using the wizard, Create in Design View, Printing reports. 13. Importing, Exporting, Linking.

Text Book

"PC SOFTWARE for Windows 98 Made Simple", 2006, R.K.Taxali, TATA McGrawHill Publishing Company Limited, New Delhi.

"Introduction to Computers with MS-Office 2000" 2001, Alexis Leon & Mathews Leon, TATA McGraw Hill Publishing Company Limited, New Delhi.

Book for Reference:

"*Microsoft Office",* Gordon Padwick, Sue Plumley, Debbie walkowski, Prentice Hall of India Private Limited, New Delhi.

Outcomes:	➢ Students will able to understand the Word, Power Point concepts ➢ Students will able to work with database using Access, Excel.

Course Code	Allied	T/P	C	H/W
22BCEA2	**DIGITAL PRINCIPLES & COMPUTER ORGANIZATION**	**T**	**3**	**3**

Objectives	➢ To understand the basic concepts of Digital electronics ➢ To enable the students in knowing the basic concepts of gates, electronic circuits and their working principles.
Unit –I	Number Systems and Codes: Binary Number system – Binary to decimal –decimal to binary – hexa decimal – ASCII code – Excess-3 Code – Gray code. Digital Logic: The Basic Gates – NOT, OR, AND - Universal Logic Gates – NOR, NAND.
Unit – II	Combinatorial Logic Circuits: Boolean Laws and Theorems. - Sum of Products method - Truth table to Karnaugh Map – Pairs, Quads, Octets – Don't Care Conditions - Product-of sums method -Product-of sums Simplifications. Data Processing Circuits: Multiplexers – Demultiplexers-1-of-16 Decoder – BDC- todecimal Decoders – Seven-segment Decoders – Encoders – Exclusive-OR Gates- Parity Generators and Checkers.
Unit – III	Arithmetic Circuits: Binary Addition- Binary Subtraction – 2'S Complement Representation - 2'S Complement Arithmetic – Arithmetic Building Blocks.
Unit – IV	Basic Computer organization and Design: Instruction codes - stored program organization - Computer registers and common bus system - Computer instructions - Timing and control - Instruction cycle: Fetch and Decode - Register reference instructions. Micro programmed Control: Control memory organization - Address sequencing, micro instruction format and symbolic microinstructions - symbolic micro-program - binary microprogram.
Unit – V	Central Processing Unit : General register organization - stack organization – instruction formats - addressing modes - Data transfer and manipulation - Program control. CISC and RISC - Parallel processing - Pipeline- general consideration. Input-output organization: Peripheral devices - I/O interface - Memory organization: Memory hierarchy - Main memory - Auxiliary memory.

Text Book:

Digital Principles and Applications – Donald P Leach, Albert Paul Malvino, GoutamSaha, 8th edition , McGraw-Hill Education, 3rd reprint 2015. 2.

Computer System Architecture, M. Morris Mano, Pearson Education, 3rd edition.,2007

UNIT I	Chapters 5: (5.1 to 5.9) and 2: (2.1 to 2.3)	Text Book 1
UNIT II	Chapters 3: (3.1 to 3.8) and 4: (4.1 to 4.7)	Text Book 1
UNIT III	Chapters 6: (6.1 to 6.8)	Text Book 1
UNIT IV	Chapters 5 (5.1 to 5.5) and 7 (7.1 to 7.3)	Text Book 2
UNIT V	Chapters 8 (8.1 to 8.8), 9 (9.1 to 9.2), 11 (11.1 to 11.5) and 12(12.1 to 12.3)	Text Book 2

Outcomes:	➢ Students will able to understand the basic concepts of Digital Electronics ➢ Students will able to design circuits and how to implement.

Course code 22BCEAP2	Allied	T/P	C	H/W
	DIGITAL PRINCIPLES & COMPUTER ORGANIZATION LAB	**P**	**2**	**2**

Objectives	➢ To Understand the Digital Electronics Practically ➢ To know how to solve gates and other functions.

1. AND, OR and NOT Gate using Truth Table
2. Universality of NAND & NOR gates.
3. Verification of Boolean laws using NAND gates (Associative, Commutative & Distributive Laws)
4. Verify De-Morgans theorem
5. Verification of Boolean laws using NOR gates (Associative, Commutative & Distributive Laws)
6. Sum of Products using NAND gates and Product of Sums using NOR Gates.
7. 4-bit binary parallel adder and Subtractor IC 7483
8. Counter using IC 7473
9. Study of RS, D, T and JK Flip-Flops with IC's.
10. Study of Encoder & Decoder.
11. Study of Multiplexer & De-Multiplexer.
12. Half and Full Adder using Simple & NAND Gates.
13. Half and Full Subtractor using Simple & NAND Gates.

Outcomes	➢ Students were able to solve simple gate functions. ➢ Students were able to solve and Design circuits using IC.

Course Code 22BCEA3	Allied	T/P	C	H/W
	Operating System	**T**	**3**	**3**
Objectives	➢ Understand the basic components of Operating Systems and their interactions. ➢ Understand the basics of Process Management, Memory Management , Deadlock Management and File Systems.			
Unit –I	Introduction: What is an operating system? History of operating system, computer hardware, different operating systems, operating system concepts, system calls, operating system structure. Processes and Threads: Processes, threads, interprocess communication, scheduling, IPC problems.			
Unit – II	Memory Management: No memory abstraction, memory abstraction: address spaces, virtual memory, page replacement algorithms, design issues for paging systems, implementation issues, segmentation. File Systems: Files, directories, file system implementation, file-system management and optimization, MS-DOS file system, UNIX / Linux file system, CD ROM file system.			
Unit – III	Deadlocks: Resources, introduction to deadlocks, the ostrich algorithm, deadlock detection and recovery, deadlock avoidance, deadlock prevention, issues. Case Study: Overview of Linux, Linux Goals , Interfaces to Linux ,The Shell , Linux Utility Programs , Kernel Structure. Android and Google - History of Android - Design Goals -Android Architecture - Linux Extensions -Android Applications.History of Windows-MS-DOS-based Windows,NT-based Windows , Modern Windows.			
Unit – IV	Linux :Basic features, advantages, installing requirement, basic architecture of Linux system. Commands for files and directories cd, cp, mv, rm, mkdir,more, less, creating and viewing files, using cat, file comparisons, View files, disk related commands, checking disk free spaces, Essential linux commands.			
Unit – V	Understanding shells, Processes in linux – scheduling of processes at command, batch commands, kill, ps, who,sleep, Printing commands, grep, fgrep, find, sort,cal, banner, touch, file related commands – ws, sat, cut, grep, dd, etc. Mathematical commands – bc, expr, factor,units. Vi, joe, vim editor. Shell programming: Shell programming basic, various types of shell, shell programming in bash, conditional and looping statements, case statements, parameter passing and arguments, shell variables, shell keywords, use of grep in shell, awk programming.			

Books for Reference:

Modern Operating Systems-Andrew S. Tanenbaum,Herbert Bos- 4th Edition-Pearson Prentice Hall

Operating Systems Concepts-Abraham Silberschatz-Peter Baer Galvin- Greg Gagne-8th Edition

Operating Systems Internals And Design Principles- William Stallings-Eighth Edition

Linux Command Line and Shell Scripting Bible-Christine Bresnahan and Richard BLUM

Outcomes	➢ Explain the structure and functions of operating systems along with their components, types and working. ➢ Elaborate the system calls for process management and file management. ➢ Make use of appropriate Linux commands.

Course Code	Allied	T/P	C	H/W
22BCEAP3	**Operating System Lab**	**P**	**2**	**2**

1.Linux commands: Working with Directories:

a pwd, cd, absolute and relative paths, ls, mkdir, rmdir

b file, touch, rm, cp. mv, rename, head, tail, cat, tac, more, less, strings, chmod

2.Linux commands: Working with files:

a ps, top, kill, pkill, bg, fg

b grep, locate, find, locate

c date, cal, uptime, w, whoami, finger, uname, man, df, du, free, whereis, which

d Compression: tar, gzip

3.Windows (DOS) Commands

a Date, time, prompt, md, cd, rd, path.

b Chkdsk, copy, xcopy, format, fidsk, cls, defrag, del, move.

c Diskcomp, diskcopy, diskpart, doskey, echo

d Edit, fc, find, rename, set, type, ver

4.Write a Shell script that displays list of all the files in the current directory to which the user has read, write and execute permissions.?

5.Write a shell script that takes argument and reports on whether it is directory, a file, or something else.

6.Write a Shell script to list all of the directory files in a directory.

7.Write a awk script to find the number of characters, words and lines in a file?

8.Write a shell script to perform the following string operations:

(a) To extract a sub-string from a given string

(b) To find the length of a given string

9.Write a shell script that accepts a file name, starting and ending line numbers as arguments and displays all the lines between the given line numbers.

10. Write a shell script that accepts one or more file name as arguments and converts all of them to uppercase, provided they exist in the current directory.

11. Write a Shell script to find factorial of a given integer.

12.Write a Shell script to find biggest no from two nos.

13. Write a Shell script to find the give no is odd or even.

14.Installation of Linux operating system on virtual machine.

15.Installation of Windows operating system.

Course code 22BCEA4	Allied	T/P	C	H/W
	Internet and Web Design	**T**	**2**	**2**

Objectives	➢ To learn more about markup languages ➢ To understand various web services
Unit -I	Internet and the World Wide Web: What is Internet? Introduction to internet and its applications, E-mail, telnet, FTP, e-commerce, video conferencing, e-business. Internet service providers, domain name server, internet address, World Wide Web and its evolution, uniform resource locator (URL), browsers, search engine, web server, HTTP protocol, Routers, Gateways, Bridge, Switches, Subnet and Intranet.
Unit-II	HTML: Introduction, Why HTML5? Formatting text by using tags, using lists and backgrounds, Creating hyperlinks and anchors. Style sheets, CSS formatting text using style sheets, formatting paragraphs using style sheets. Creating navigational aids: planning site organization, creating text based navigation bar, creating graphics based navigation bar, creating graphical navigation bar, creating image map, redirecting to another URL, creating division based layouts: HTML5 semantic tags, creating divisions, creating HTML5 semantic layout, positioning and formatting divisions.
Unit -III	Creating tables: creating simple table, specifying the size of the table, specifying the width of the column, merging table cells, using tables for page layout, formatting tables: applying table borders, applying background and foreground fills, changing cell padding, spacing and alignment, creating user forms: creating basic form, using check boxes and option buttons, creating lists, additional input types in HTML5, Incorporating sound and video: audio and video in HTML5, HTML multimedia basics, embedding video clips, incorporating audio on web page.
Unit -IV	Java Script: Introduction, Client-Side JavaScript, Server-Side JavaScript, JavaScript Objects, JavaScript Security, Operators , Conditional and Looping Statements-Break, continue, User Defined Function. Array, Date, Math, Number, Object, String, regExp.
Unit =V	Document and its associated objects: document, Link, Area, Anchor, Image, Applet, Layer . Events and Event Handlers : General Information about Events,Defining Event Handlers, event, onAbort, onBlur, onChange, onClick,onDblClick, onDragDrop, onError, onFocus, onKeyDown,onKeyPress, onKeyUp, onLoad, onMouseDown, onMouseMove,onMouseOut, onMouseOver, onMouseUp, onMove, onReset,onResize, onSelect, onSubmit, onUnload.

Reference and Textbooks:

Web Design The Complete Reference-Thomas Powell -Tata McGraw Hill

HTML5 Step by Step -Faithe Wempen-Microsoft Press

HTML 5 Black Book-2nd Edition - Dreamtech Press -2016

Head First HTML 5 Programming-Eric Freeman-O'Reilly

Web Technologies--A Computer Science Perspective-Jeffrey C. Jackson- Pearson Education.

Outcomes	➢ Understand web essential concepts and to design simple web pages using markup language. ➢ Understand style properties and able to build dynamic web pages using scripting language.

Course Code	Allied	T/P	C	H/W
22BCEAP4	**Web Designing Lab**	**P**	**2**	**2**

1. Design a web page using different text formatting tags.
2. Design a web page with links to different pages and allow navigation between web pages.
3. Design a web page demonstrating all Style sheet types .
4. Design a web page with Image maps.
5. Design a web page demonstrating different semantics.
6. Design a web page with different tables.
7. Design a web page with a form that uses all types of input controls.
8. Design a web page embedding with multimedia features.
9. Write a JavaScript program to find the factorial value.
10. Write a JavaScript program to print the Fibonacci series.
11. Design a form and validate all the controls placed on the form using Java Script.
12. Write a JavaScript program to display all the prime numbers between 1 and 100.
13. Write a JavaScript program to accept a number from the user and display the sum of its digits.
14. Write a program in JavaScript to accept a sentence from the user and display the number of words in it. (Do not use split () function).
15. Write a java script program to design simple calculator.