

# CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

## DIPLOMA PROGRAMME IN COMPUTER SCIENCE AND ENGINEERING

### Semester – IV

### COURSE OF STUDY AND SCHEME OF EXAMINATION

S. No	Board of Study	Subject Code	Subject	Periods/Week (In Hours)			Scheme of Examination						Credit L+(T+P)/2
				L	T	P	Theory			Practical		Total Marks	
							ESE	CT	TA	ESE	TA		
1.	Computer Science Engg	222411(22)	Computer Architecture	3	1	-	100	20	20	-	-	140	4
2.	Computer Science Engg	222412(22)	Data Structure	4	2	-	100	20	20	-	-	140	5
3.	Computer Science Engg	222413(22)	Programming with Visual Basic	3	1	-	100	20	20	-	-	140	4
4.	Info. Tech.	222414(33)	IT Trends & Technologies	3	1	-	100	20	20	-	-	140	4
5.	Info. Tech.	222415(33)	Multimedia and Web Technology	3	1	-	100	20	20	-	-	140	4
6.	Computer Science Engg	222421(22)	Data Structure Lab	-	-	6	-	-	-	70	30	100	3
7.	Computer Science Engg	222422(22)	Programming with Visual Basic Lab	-	-	4	-	-	-	70	30	100	2
8.	Info. Tech.	222423(33)	Multimedia and Web Technology Lab	-	-	4	-	-	-	70	30	100	2
<b>TOTAL</b>				<b>16</b>	<b>6</b>	<b>14</b>	<b>500</b>	<b>100</b>	<b>100</b>	<b>210</b>	<b>90</b>	<b>1000</b>	<b>28</b>

L : Lecture hours : T : Tutorial hours, P : Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment ;

**Note :** Industrial Training will be organised after 4<sup>th</sup> sem, evaluation will be done in 5<sup>th</sup> semester.

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY  
BHILAI**

- A) SEMESTER : IV  
 B) COURSE : COMPUTER ARCHITECTURE  
 C) CODE : 222411(22)  
 D) BRANCH/DISCIPLINE : COMPUTER SCIENCE & ENGINEERING  
 E) RATIONALE :

The students after studying this subject will be able to understand the architecture and maintenance of computer system. They will understand hardware developmental, processor and control design of computer systems. This will develop the basic insight in student about the change in the hardware technology, technology design and thereby develop better knowledge for the maintenance and repairing of the computer system. They will also be able to learn how to plan for establishing a computer set-up for any given requirement.

**F) TEACHING AND EXAMINATION SCHEME**

Course Code	Periods/Week (In Hours) (Teaching Scheme)			Scheme of Examination						Credit $L + \frac{(T+P)}{2}$
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
222411(22)	3	1	-	100	20	20	-	-	140	4

L : Lecture hours ; T : Tutorial hours; P : Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment

**H) DISTRIBUTION OF MARKS AND HOURS**

Chapter No.	Chapter Name	Hours	Marks
1.	Computer Architecture.	12	20
2.	Instruction Cycle, Instruction Codes	10	15
3.	Programming	12	20
4.	Central Processing Unit (CPU)	10	15
5.	Input/Output Organization	08	15
6.	Memory Organization	12	15
<b>Total</b>		<b>64</b>	<b>100</b>

## **D) DETAILED CONTENT**

### **CHAPTER - 1 COMPUTER ARCHITECTURE**

- ?? Introduction to 8085 /8086 Architectural Block-Diagram
- ?? Register Transfer and Micro-operations, bus and Memory Transfer, three state bus buffers memory transfer. Arithmetic, logic, shift, Binary adder, subtractor, incrementor, decrementor, Arithmetic circuits. Various logic micro-operations.& hardware implementation. Shift micro-operation-Hardware Implementation. ALU- circuits

### **CHAPTER - 2 INSTRUCTION CYCLE, INSTRUCTION CODES**

- ?? Fetch, decode, Register & memory reference instructions AND to AC, ADD to AC, LDA, STA, BUN, BSA, ISZ. Input output instruction & interrupts.

### **CHAPTER - 3 PROGRAMMING**

- ?? M/C language, Assembly language, Assembler first pass, program loops, programming Arithmetic & logic operations. Subroutines, I/P Programming.

### **CHAPTER – 4 CENTRAL PROCESSING UNIT**

- ?? Register organization, stack organization, instruction format, addressing modes, data transfer instructions and manipulation instruction, program control instruction, RISC and CISC.

### **CHAPTER – 5 INPUT/OUTPUT ORGANIZATION**

- ?? I/O Interface, Isolated v/s memory mapped I/O DMA- DMA Controller and DMA Transfer, I/O Processor.

### **CHAPTER – 6 MEMORY ORGANIZATION**

- ?? Main memory-RAM, ROM, Memory address map, Auxiliary memory-magnetic disc, tapes etc., Cache memory-Associative mapping, direct & set associative mapping. Virtual memory-Address Space, memory space, Address mapping using pages, page table, page replacement. Memory management hardware-Segment and page mapping, memory protection.

## **a) SUGGESTED IMPLEMENTATION STRATEGIES**

According to the theory and practical schedules the subject teacher will complete the session. The student themselves would be able to plan and submit a proposal for establishing a computer setup for industry

a) **SUGGESTED LEARNING RESOURCES**

a) **Reference Books**

<b>S. No.</b>	<b>Title</b>	<b>Author, Publisher &amp; Address, Edition,Year of Publication,</b>
1.	Computer Architecture and Organization	J.P.Hayes,Tata McGraw Hills Publishing Co.l Ltd., New. Delhi
2.	IBM PC and Clones	B.Govindrajulu,Tata McGraw Hill Publications New Delhi
3.	Inside IBM PC	Peter Norton,Prentice Hall of India Pvt.Ltd , New Delhi IV th - Edition1999
4.	Structured computer Organization	Andrews TanenbaumPrentice Hall of India Pvt.Ltd, New Delhi III rd- Edition 1997
5.	Electronic fault diagnosis	G.C.Loveday,Longman Scientifi & Technical , IIIrd
6.	Upgrading and repairing PCs	Scott Mueller, QUE Publication

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## CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

- A) **SEMESTER** : **IV**  
 B) **COURSE** : **DATA STRUCTURE**  
 C) **CODE (Theory)** : **222412(22)**  
 D) **BRANCH/DISCIPLINE** : **COMPUTER SCIENCE & ENGINEERING**  
 E) **RATIONALE:**

The study of data structure is an essential part of computer science. In system programming, application programming the methods & techniques of data structures are widely used. The study of data structure helps the students in developing logic & structured programs.

### F) **TEACHING AND EXAMINATION SCHEME**

Course Code	Periods/Week (In Hours) (Teaching Scheme)			Scheme of Examination						Credit [L+(T+P)] 2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
222412(22)	4	2	-	100	20	20	-	-	140	5
222421(22)	-	-	6	-	-	-	70	30	100	3

L : Lecture hours ; T : Tutorial hours; P : Practical hours  
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### G) **DISTRIBUTION OF MARKS AND HOURS**

Chapter No.	Chapter Name	Hours	Marks
1.	Introduction to data structure	8	10
2.	Arrays	12	12
3.	Stacks	12	14
4.	Queues	14	14
5.	Linked list	14	14
6.	Searching & sorting	18	20
7.	Introduction to TREES and GRAPHS	18	16
	<b>Total</b>	<b>96</b>	<b>100</b>

### H) **DETAILED CONTENT**

#### CHAPTER – 1 INTRODUCTION TO DATA STRUCTURE

- ?? General concept of
  - Data,
  - Data types,
  - Data variable,
  - Constants & their storage representation,
  - Data types of C,
- ?? Data Structure and their types,
  - Linear data type,
  - Non- Linear data type,
  - Primitive data type,
  - Non primitive data type etc.

## CHAPTER – 2    **ARRAYS**

- ?? Arrays & their type
  - One-dimensional,
  - Two- dimensional
  - Multidimensional
- ?? Defining an array & physical allocation.
- ?? Operations on arrays:
  - Searching,
  - Sorting
- ?? Character strings in C,
- ?? Arrays in C,
  - Structures & Unions in C.

## CHAPTER – 3    **STACKS**

- ?? Definitions & examples of stack,
- ?? Primitive operations
  - Push,
  - Pop
- ?? Overflow & underflow of stack.
- ?? Representing Stacks in C as an array
- ?? Applications of stack.
  - In-fix,
  - Post-fix,
  - Pre-fix,
- ?? Converting in-fix to Post-fix and Pre-fix,
  - Concept of recursion ( with example Such as factorial, fibonacci sequence, multiplication of natural numbers).

## CHAPTER – 4    **QUEUES.**

- ?? Introduction to queues,
- ?? Definition of Queue
- ?? Concept of queues
  - Front,
  - Rear,
  - FIFO,

- Overflow
- Underflow.
- ?? Operations on queue
  - Searching
  - Insertion,
  - Deletion.
- ?? Types of queue
  - Priority queue,
  - Circular queue

## CHAPTER – 5

### LINKED LIST

- ?? Introduction,
- ?? Terminologies: Node, Address, Pointer, Information, Next, Null pointer, Empty list etc.
- ?? Operations on list
  - Searching,
  - Insertion and
  - Deletion
- ?? Types of lists
  - Linked list and
  - Circular list
- ?? Array stacks, queues, implementation using list.
- ?? Storage allocation and garbage collection

## CHAPTER – 6

### SEARCHING & SORTING

- ?? Searching
  - Linear Search,
  - Binary Search,
  - Hash Search.
- ?? Sorting
  - Bubble Sort,
  - Selection Sort,
  - Merge Sort,
  - Radix Sort,
  - Bucket Sort,
  - Heap Sort

## CHAPTER-7

### INTRODUCTION TO TREES AND GRAPHS

- ?? Directed and Un-directed Graphs, Data Structure for graph representation.  
DFS, BFS
- ?? Trees: Definition , Traversal, Pre order, In-order, Post-order, Data structure for Binary search tree.

## D) SUGGESTED IMPLEMENTATION STRATEGIES

Implementation Strategy: - Data Structure is a subject, which deals with data & their structures (definition, initialization, storage, operations & applications.) To implement the methods of data structure C is found to be appropriate language, since it contains all data types & control structures.

The methods mentioned in the syllabus can be implemented in C either by arrays or using Pointers. The student/teacher has to study/teach data structures & their methods using algorithms & should be implemented in practical using C. While implementing this one should give the algorithm/program, assignments just after the completion of related topic. One also can give more assignments based on the topic as per the availability of time. Searching & sorting methods can be implemented as per the need in the required topics.

## J) SUGGESTED LEARNING RESOURCES

### a) Reference Books

S. No.	Title	Author, Publisher & Address, Edition,Year of Publication,
1.	Data Structure Using C++	Tenenbaum, PHI
2.	Data structures, Algorithms and OOPs	Gregory Heilman Mc-Graw Hills
3.	Data Structure Using C lab workbook	Shukla BPB Publication
4.	Teach Yourself data Structure and Algorithms in 24 Hrs.	Robert Lafore BPB Publication
5.	Data structure and algorithm	Seymour Lipsuitz, schaum series
6.	Pointers in C	Kanitkar , BPB publication



**K) LIST OF PRACTICALS/ TUTORIALS:**

- ?? Program to search an element of array using linear search.
- ?? Program to reverse the element of array.
- ?? Insertion and deletion on array at specified position.
- ?? Program for Matrices operation-
  - ?? Transpose
  - ?? Multiplication
  - ?? Addition
  - ?? Adjoint
  - ?? Inverse
- ?? Program to Concatenate two strings using array.
- ?? Program based on structure union.
- ?? Program to implement PUSH and POP operation on stack.
- ?? One program based on
  - Infix to postfix or infix to prefix using stack concept
  - Recursion using stack.
- ?? Program based on queue & their operations for an application.
- ?? Program for implementation of circular queue.
- ?? Program based on list operations and its application.
- ?? Program based on pointers in C.
- ?? Implementation of tree using linked list.
- ?? Implementation of different types of sorting techniques.
- ?? Implementation of Binary search Algorithm using Binary tree
- ?? Assignment based on graph theory.

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**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY  
BHILAI**

- A) **SEMESTER** : **IV**  
 B) **SUBJECT TITLE** : **PROGRAMMING WITH VISUAL BASIC**  
 C) **CODE** : **222413(22)**  
 D) **BRANCH/DISCIPLINE** : **COMPUTER SCIENCE & ENGINEERING**  
 E) **RATIONALE** :

This subject helps to understand the principles and techniques involved in developing applications with Visual Basic. The course content is designed to understand & implement the Event Driven Architecture of Visual Programming. The student would be able to identify and use of different categories of controls, learn working with forms and different data access techniques, establish a data base connection and identify the categories of ActiveX controls and creating them.

It is expected that, students will be able to develop Graphical User Interface Applications (GUI) by using Visual Basic.

**F) TEACHING AND EXAMINATION SCHEME**

Course Code	Periods/Week (In Hours) (Teaching Scheme)			Scheme of Examination						Credit $L + \frac{(T+P)}{2}$
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
222413(22)	3	1	-	100	20	20	-	-	140	4
222422(22)	-	-	4	-	-	-	70	30	100	2

L : Lecture hours ; T : Tutorial hours; P : Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment

**G) DISTRIBUTION OF MARKS AND HOURS**

Chapter No.	Chapter Name	Hours	Marks
1	Introduction to visual environment	6	8
2	Introduction to visual basic	6	10
3	Controls and events	8	15
4	Advance controls & events	8	13
5	Module, class module MDI, menu editor and graphics	12	18
6	Database and report generation	12	15
7	Introduction to ACTIVE - X controls	12	21
<b>Total :</b>		<b>64</b>	<b>100</b>

## **H) DETAILED COURSE CONTENT**

### **CHAPTER - 1 INTRODUCTION TO VISUAL ENVIRONMENT**

- ?? Concepts of visual programming, object, features
- ?? Environment of VB – Menu bar, toolbar, project explorer, toolbox, properties window, form designer, form layout, immediate window. Concept of project, elements of projects, form etc.

### **CHAPTER – 2 INTRODUCTION TO VISUAL BASIC**

- ?? Data types, variables, constants, arrays, collections, procedures, Arguments, function return values, control flow statements, loop statements, Nested control structures, The exit statement, math operators & formulas, logical operators, string functions, special functions available in VB like Input Box ( ), Message Box ( ), Format ( ).

### **CHAPTER – 3 CONTROLS AND EVENTS.**

- ?? Text box, listBox, ComboBox, ScrollBar and slider
- ?? Control.
- ?? Container – picturebox, frame.
- ?? Option button, checkbox, command button, images.
- ?? OLE controls,
- ?? File controls.
- ?? Designing a form using controls, concepts of event & properties, changing properties (runtime & design time) Important events of each control & creating applications using controls.
- ?? Timer.

### **CHAPTER – 4 ADVANCE CONTROLS & EVENTS**

- ?? Common Dialog Box controls, The Tree view and List
- ?? View controls, the rich textbox controls.
- ?? Windows common controls – status Bar, Tab control, image list control, ms chart control.
- ?? Important properties, changing properties at design or run time event handling.

### **CHAPTER – 5 MODULE, CLASS MODULE MDI, MENU EDITOR AND GRAPHICS**

- ?? Concept of module, class module, MDI, how to use them.
- ?? Creating own menu using menu editor, popup menu.
- ?? Graphics :-
- ?? Basic controls – Line & shape control , line method, circle method,

Pset method, RGB ( ) Functions, Paint picture ( ) method, Load picture ( ) function.

## CHAPTER – 6

### II) DATABASE AND REPORT GENERATION

?? Concept of database, Record, Record set, Data control & its important properties, structure of BIBLIO database, validating data, entering data, visual data manager, data bound grid control, DB List, DB combo.

?? Programming with ADO ( Active data objects ) ADO Objects, connection, command, record set , parameter, Creating & closing a connection; executing a command, Object, executing a stored procedure from a command

?? Object, creating record sets objects, cursor Location, Cursor types, lock types.

## CHAPTER – 7

### INTRODUCTION TO ACTIVE X CONTROLS

?? The user control object – initialise Event, Terminate Event, Init properties Event, Read properties Event, Write Properties Event, Paint/Raise Event, Observing the events In the Date controls,

?? Exploring the properties of ActiveX controls – Debugging the properties, extend properties, Ambient Properties, creating design time only properties, creating Clock control, events in ActiveX controls,

?? Using the ActiveX control Interface wizard-Adding the Wizard to visual Basic.

?? Property pages – using the property page Wizard, creating property pages without the wizard.

?? Creating a simple ActiveX control

### I) IMPLEMENTATION STRATEGIES

The students should be given maximum hands on practice to develop skills in Visual Basic programming by using various Basic Controls and Advance Controls statements. Also the students will set new activeX controls and property of the pages through assignments.

The concept of database & active data objects will help the students to use

Visual Basic as a front-end tool and database software as backend to develop software systems.

A mini project can be done by the end of term.

### J) SUGGESTED LEARNING RESOURCES

**a) Reference Books**

**Course: Programming with Visual basic, Lab**

**Code: 222422(22)**

**Hours: 64**

**K) LIST OF PRACTICALS:**

<b>S. No.</b>	<b>Title</b>	<b>Author, Publisher &amp; Address, Edition,Year of Publication,</b>
1.	Mastering VB6	Evangelos Petront Sos. BPB publications, B-14 connaught place New Delhi, 1 <sup>st</sup> Indian edition 1998
	Visual Basic	Nel Jerka Tata Mcgraw Hill publishing company Ltd., New Delhi, 5 <sup>th</sup> Reprint Edition 2000

- ?? Design a form for arithmetic operations using textbox, label, command button.
- ?? Design a form for speed control program using scroll bars.
- ?? Design a form to display a picture using image box/picture box selected from a file in file list box directory list box, drive list box.
- ?? Design a form using shape control to display signal and change it timely using timer control.
- ?? Design form to create a font dialog box using combo/ list, text, option buttons, and check box control.
- ?? Design a simple application using OLE control.
- ?? Design a form using Tab control, image list, status bar, tool bar which facilitates different arithmetic operations.
- ?? Design a form using menu editor, MDI, common dialog box which has standard format like Notepad. (eg. File , Edit , format) open copy, font, save and cut.
- ?? Design a simple database application which covers all database concepts.(Data control,DAO ,RDO,ADO, DB-list , DB combo), Create property pages without using the property page wizard.

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**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY  
BHILAI**

- A) **SEMESTER** : **IV**  
 B) **COURSE** : **IT TRENDS AND TECHNOLOGIES**  
 C) **CODE** : 222414(33)  
 D) **BRANCH/DISCIPLINE** : **Computer Science & Engineering**  
 E) **RATIONALE** :

Information Technology is a term that encompasses all forms of technology used to create, store, modify and transmission of information in its various forms. The key factor in information technology is the converges of computers with telecommunication. Computers and communication technology both in conjunction are emerging in every field to store analyse and disseminate all kind of information through advanced communication infrastructures now available all over the world. This subject will introduce the latest trends and technologies available in the field of IT.

**F) TEACHING AND EXAMINATION SCHEME**

Course Code	Periods/Week (In Hours) (Teaching Scheme)			Scheme of Examination						Credit $\frac{L+(T+P)}{2}$
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	CSE	TA		
222414(33)	3	1	-	100	20	20	-	-	140	4

L : Lecture hours ; T : Tutorial hours; P : Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment

**H) DISTRIBUTION OF MARKS AND HOURS**

Chapter No.	Chapter Name	Hours	Marks
1	Parallel Computing	10	10
2	Mobile Computing	12	20
3	Electronic Commerce	15	25
4	Software agents	12	20
5	Datawarehousing and Datamining	15	25
	<b>TOTAL</b>	<b>64</b>	<b>100</b>

## H) DETAILED COURSE CONTENT

### CHAPTER-1 PARALLEL COMPUTING

- ?? Parallel virtual machine (PVM) and
- ?? message passing interface (MPI) libraries and calls. Advanced
- ?? architectures, Today's fastest computers.

### CHAPTER-2 MOBILE COMPUTING

- ?? Mobile connectivity-cells, framework, wireless delivery technology and switching methods, mobile information access devices mobile data internetworking standards, cellular data communication protocol, mobile databases- protocols, scope, tools and technology. M-business. WAP/Blue tooth.
- ?? E-Technologies

### CHAPTER-3 ELECTRONIC COMMERCE

- ?? Framework, media convergence of applications, Consumer applications, organization applications
- Electronic Payment Systems**
- ?? Digital token, smart card, credit card, risk in electronic payment system, designing electronic payment system
- Electronic Data Interchange (EDI)**
- ?? Concept, application (legal, security & privacy) issues, EDI & electronic commerce, standardization & EDI, EDI software implementation, EDI envelop for message transport, Internet based EDI
- Digital Library**
- ?? Concept, type of digital document issue behind document infrastructure

### CHAPTER-4 SOFTWARE AGENTS

- ?? Characteristics and properties of agents, technology behind software agents.
- GIS And ERP**
- ?? Main concept in geographical information system E-cash, EBusiness, ERP packages

### CHAPTER-5 DATA WAREHOUSING

- ?? Data warehousing environment, architecture of a data warehousing methodology, analysis design, construction and administration
- Data Mining**
- ?? Extracting models & patterns from large database, data mining techniques, classification, regression, clustering, summarization, dependency modeling, link analysis, sequencing analysis, mining scientific & business data

## I) SUGGESTED IMPLEMENTATION STRATEGIES

New technologies available in the field of IT need to be study. Latest development in the area need to be study from the Internet.

**K) SUGGESTED LEARNING RESOURCES**

**a) Reference Books**

<b>S. No.</b>	<b>Title</b>	<b>Author, Publisher &amp; Address, Edition,Year of Publication,</b>
1.	Introduction to parallel computing	Gramma,Pearson education india
2.	Element of parallel computing	Rajaraman,PHI
3.	Introduction to wireless & mobile computing	Agrawal & dharma, Vikas publication
4.	E-Commerce	S. Jaiswal,Galgotia publication
5.	An introduction to graphical information system	Heywood,2 <sup>nd</sup> edition, Pearson education india
6.	Enterprise resource planning,concepts and practice	Garg & venkitakrishnan,PHI
7.	Dataware housing & mining	Halsall
8.	Modern datawarehousing, mining & visualization core concept	Marakas, Pearson education india

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**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY  
BHILAI**

- A) **SEMESTER** : **IV**  
 B) **COURSE** : **MULTIMEDIA and WEB TECHNOLOGY**  
 C) **CODE** : **222415(33)**  
 D) **BRANCH/DISCIPLINE** : **COMPUTER SCIENCE & ENGINEERING**  
 E) **RATIONALE** :

With the advent of personal computers, multimedia technology has become a powerful technology for instruction and communications. Today multimedia technology is used to develop computer-based presentation, training packages and e-commerce. This subject therefore aims to provide the required knowledge and skill in students that are required to develop this form of digital media.

**F) TEACHING AND EXAMINATION SCHEME**

Course Code	Periods/Week (In Hours) (Teaching Scheme)			Scheme of Examination						Credit  [L+(T+P)] 2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
222415(33)	3	1	-	100	20	20	-	-	140	4
222423(33)	-	-	4	-	-	-	70	30	100	2

L : Lecture hours ; T : Tutorial hours; P : Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment

**H) DISTRIBUTION OF MARKS AND HOURS**

Chapter No.	Chapter Name	Hours	Marks
1.	Multimedia Technology and its Applications	4	6
2.	Text and its Processing Tools	8	12
3.	Images And Its Processing Tools	8	8
4.	Digital Sound, Its Capturing And Editing Tools	8	8
5.	Computer Animation, its basics and Developing Tools	8	10
6.	Digital Video, its Video Making Tools	6	8
7.	Development Of A Web Page	4	8

Chapter No.	Chapter Name	Hours	Marks
8.	Linking Of HTML Documents And Images	6	10
9.	Tables	4	10
10.	<b>III) Lists</b>	4	10
11.	Developing HTML Forms	4	10
<b>Total</b>		<b>64</b>	<b>100</b>

## H) DETAILED COURSE CONTENT

### CHAPTER - 1 MULTIMEDIA TECHNOLOGY AND ITS APPLICATIONS

?? **Computer Technology and application of multimedia technology, Multimedia Technology and its different forms, Hardware and Software required.**

### CHAPTER – 2 TEXT AND ITS PROCESSING TOOLS

?? Plain text and formatted text, Hyper Text Mark-up Language (html), conversion of text formats, object linking and embedding concept and Text preparation tools.

### CHAPTER – 3 IMAGES AND ITS PROCESSING TOOLS

?? Types of Graphics- Vector and Raster  
 ?? Attributes of Images - Resolutions, Images sizes, Pixel Depth, Colour, Compression of images and its affect to quality and storage size.  
 ?? Image File Format, file formats conversions, Importance of compression techniques  
 ?? Processing Tools - Techniques of capturing images and converting images, Software tools for processing Images - such as AUTO CAD, Paint Short Pro, Adobe PhotoShop.  
 ?? Adobe Photoshop 5.0 s/w - Create, Process and Print Graphics

### CHAPTER – 4 DIGITAL SOUND ITS CAPTURING AND EDITING TOOLS

?? Digital sound and its Attributes - Sampling of Sound, Frequency, Sound Depth, Channels in sound and their effects on quality and storage size estimation of space of a sound file.  
 ?? Format of Sound: Midi and MP3 files  
 ?? Method to Capture and edit sound – Capture sound using microphone, and process using Wave for Windows or Wave Studio.

### CHAPTER-5 COMPUTER ANIMATION ITS BASICS AND DEVELOPING

?? Use of Animation, Software for Animations, Effect of resolution, pixel depth, image size on quality and storage size, Types of Animations.

?? Basic Features of Animation Tools - Animator Pro, 3-D studio/Max.

### CHAPTER-6 DIGITAL VIDEO AND VIDEO MAKING TOOLS

?? Basic of Video - Analog and Digital Video, Importance of Video

Compressions

?? Basic features of video editing and movie making tools - Video for window/Adobe premier

## CHAPTER-7

### DEVELOPMENT OF A WEB PAGE

?? Introduction to HTML

- Components of HTML
- Tags (closed and open), Elements, Attributes

?? Structure of HTML code

- Head
- Body

?? Structure Tags

- Standard HTML, Tab HTML, Header, Title and body

?? Block level tags

- Block Formatting, Heading, Paragraph, Comments, Breaks, Centre, Text
- Alignment and font size

?? Text Level Tag

- Bold Italic, Moonscape, Underlined, strike through, superscript, subscript

?? Horizontal Rules

?? Colours in WEB page

- Background colour, Text colour, Link colour

?? Special Characters

?? Lists

- Ordered lists
- Unordered lists
- Definition list
- Nesting List

?? The Metatag

## CHAPTER-8

### IV) LINKING OF HTML DOCUMENTS AND IMAGES

?? Concepts of URL

?? Linking HTML Documents

- Anchor Tag
- Linking to a Document in the same folder
- Linking to a Document in a different folder
- Linking to a Document on the web
- Linking to specific locations within the Document
- Inserting Email links

?? Adding Images

- Types of images
- GIF
- JPEG
- PNG

?? Effect of physical size and file size of image on downloading.

- IMG tag
- Image formatting
- Alignment
- Resizing
- Vertical and Horizontal spacing
- Wrapping text

?? Image as a link

?? Image Maps

- Server side Image map
- Client side Image map

## CHAPTER-9

### V) TABLES

#### ~~Table~~ Table Tags

?? Table Tags

- <TABLE >, <TR>, <TH>, <TD> Tags

?? Spanning Rows and Columns

- <ROWSPAN>, <COLSPAN> Tag

?? Formatting tables using attributes.

- BORDER, BORDERCOLOR, NOBORDER, BGCOLOR, BACKGROUND, ALLIGN, WIDTH, NOWRAP, CELLSPACING, CELL PADDING

?? Caption tag

- tag

## CHAPTER-10

### VI) LISTS

#### ?? CREATING FRAMES AND LAYERS

- Introduction to frames
- Advantages and disadvantages of using frames.
- The <FRAMESET>, <FRAME> and <NOFRAME> tags.
- Formatting frames using attributes.

?? Frame border, Border, No resize, Scrolling, Alignment, Margin Width  
Border color.

?? Frame targeting.

- Creation of layer, switching to different layers.

## CHAPTER-11

### DEVELOPING HTML FORMS

?? Creating Forms.

?? Form controls.

- Text controls.
- Password fields
- Radio buttons
- Check boxes

- Reset and submit buttons.

?? The <TEXTAREA> Tag

?? Including select field using <SELECT> and <OPTION> Tags Processing forms

**VII) SUGGESTED IMPLEMENTATION STRATEGIES**

Teacher should explain multimedia technology and its different applications in IT industry. They should make the student work with some of the media processing tools. Extensive practice may be given to create and process graphics, animation, audio and Video using appropriate tools

**L) SUGGESTED LEARNING RESOURCES**

**a) Reference Books**

<b>S. No.</b>	<b>Title</b>	<b>Author, Publisher &amp; Address, Edition, Year of Publication,</b>
9.	Multimedia- Making It Work	Tay Vaughan, Tata McGraw-Hill, Fourth Edition, 1999
10.	Sams Teach Yourself Adobe Photoshop 7 in 24 Hours	Sams Publication
11.	Premiere 6 for Macintosh and Windows: Visual QuickStart Guide	Peachpit Press
12.	Sams Teach Yourself Macromedia Flash MX in 24 Hours	Sams Publication
13.	Multimedia for PC	
14.	HTML in 24 hours	BPB Publication

**Course: Multimedia and Web Technology, Lab**

**Practical Code : 222423(33)**

**Hours: 64**

**K) LIST OF PRACTICALS/ DEMONSTRATIONS**

**Practical:**

- ?? Work with Text Processing Tools like note-pad, MS-Word, MS-FrontPage
- ?? Create, Process and Print Graphics using adobe Photoshop, Paint shop Pro s/w.
- ?? Capture sound using microphone, and process using Wave for Windows or Wave Studio.
- ?? Study basic features of animation tools like Animator Pro, Macromedia flash, 3-D studio/Max.
- ?? Study basic features of video editing and movie making tools like Video for window/Adobe premier
- ?? Design a simple web page using HTML Tags.
- ?? Design Table through HTML.
- ?? Design and implement Hyper link and special effects on web page.
- ?? Design form by using HTML.
- ?? Embed pictures and sound on web page.

