### CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

DIPLOMA PROGRAMME IN COMPUTER SCIENCE AND ENGINEERING

Semester – IV

COURSE OF STUDY AND SCHEME OF EXAMINATION

<table>
<thead>
<tr>
<th>S. No</th>
<th>Board of Study</th>
<th>Subject Code</th>
<th>Subject</th>
<th>Periods/Week (In Hours)</th>
<th>Scheme of Examination</th>
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<td>100 20 20 - -</td>
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<td>Data Structure</td>
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<td>Programming with Visual Basic</td>
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<td>4.</td>
<td>Info. Tech.</td>
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<td>IT Trends &amp; Technologies</td>
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<td>100 20 20 - -</td>
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<td>Multimedia and Web Technology</td>
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<td>100 20 20 - -</td>
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<td>Data Structure Lab</td>
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<td>222422(22)</td>
<td>Programming with Visual Basic Lab</td>
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<td>222423(33)</td>
<td>Multimedia and Web Technology Lab</td>
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<td><strong>16 6 14</strong></td>
<td><strong>500 100 100 210 90 1000 28</strong></td>
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</table>

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 4th sem, evaluation will be done in 5th semester.
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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Periods/Week (In Hours) (Teaching Scheme)</th>
<th>Scheme of Examination</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>222411(22)</td>
<td>L 3 T 1 P - 100 CT 20 TA 20 ESE - TA -</td>
<td>Theory Practical Total Marks</td>
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<tr>
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</table>

|   | 140 | 4  |

L : Lecture hours ; T : Tutorial hours; P : Practical hours  
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H) DISTRIBUTION OF MARKS AND HOURS

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

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Title</th>
<th>Author, Publisher &amp; Address, Edition, Year of Publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>IBM PC and Clones</td>
<td>B. Govindrajulu, Tata McGraw Hill Publications New Delhi</td>
</tr>
<tr>
<td>6.</td>
<td>Upgrading and Repairing PCs</td>
<td>Scott Mueller, QUE Publication</td>
</tr>
</tbody>
</table>

******
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

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<td>222421(22)</td>
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<th>Hours</th>
<th>Marks</th>
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<tbody>
<tr>
<td>1.</td>
<td>Introduction to data structure</td>
<td>8</td>
<td>10</td>
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<tr>
<td>2.</td>
<td>Arrays</td>
<td>12</td>
<td>12</td>
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<tr>
<td>3.</td>
<td>Stacks</td>
<td>12</td>
<td>14</td>
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<td>4.</td>
<td>Queues</td>
<td>14</td>
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<td>5.</td>
<td>Linked list</td>
<td>14</td>
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<tr>
<td>6.</td>
<td>Searching &amp; sorting</td>
<td>18</td>
<td>20</td>
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<tr>
<td>7.</td>
<td>Introduction to TREES and GRAPHS</td>
<td>18</td>
<td>16</td>
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H) DETAILED CONTENT

CHAPTER – 1 INTRODUCTION TO DATA STRUCTURE
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.

I) 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

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<tbody>
<tr>
<td>1.</td>
<td>Data Structure Using C++</td>
<td>Tenenbaum, PHI</td>
</tr>
<tr>
<td>2.</td>
<td>Data structures, Algorithms and OOPs</td>
<td>Gregory Heilman, Mc-Graw Hills</td>
</tr>
<tr>
<td>3.</td>
<td>Data Structure Using C lab workbook</td>
<td>Shukla, BPB Publication</td>
</tr>
<tr>
<td>4.</td>
<td>Teach Yourself data Structure and Algorithms in 24 Hrs.</td>
<td>Robort Lafore, BPB Publication</td>
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<tr>
<td>5.</td>
<td>Data structure and algorithm</td>
<td>Seymour Lipsuitz, schaum series</td>
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<tr>
<td>6.</td>
<td>Pointers in C</td>
<td>Kanitkar, BPB publication</td>
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</table>
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 an 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 post fix 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.

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<td>222422(22)</td>
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G) DISTRIBUTION OF MARKS AND HOURS

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<tbody>
<tr>
<td>1</td>
<td>Introduction to visual environment</td>
<td>6</td>
<td>8</td>
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<td>2</td>
<td>Introduction to visual basic</td>
<td>6</td>
<td>10</td>
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<td>3</td>
<td>Controls and events</td>
<td>8</td>
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</tr>
<tr>
<td>4</td>
<td>Advance controls &amp; events</td>
<td>8</td>
<td>13</td>
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<td>5</td>
<td>Module, class module MDI, menu editor and graphics</td>
<td>12</td>
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<td>6</td>
<td>Database and report generation</td>
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<td>15</td>
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<td>7</td>
<td>Introduction to ACTIVE - X controls</td>
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</table>
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,
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:

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

?? 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.

********
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.

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<td>222414(33)</td>
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<tbody>
<tr>
<td>1</td>
<td>Parallel Computing</td>
<td>10</td>
<td>10</td>
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<tr>
<td>2</td>
<td>Mobile Computing</td>
<td>12</td>
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<td>3</td>
<td>Electronic Commerce</td>
<td>15</td>
<td>25</td>
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<tr>
<td>4</td>
<td>Software agents</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>Datawarehousing and Datamining</td>
<td>15</td>
<td>25</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td>64</td>
<td>100</td>
</tr>
</tbody>
</table>
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 &
extronic 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

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Periods/Week (In Hours)</th>
<th>Scheme of Examination</th>
<th>Credit</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>L</td>
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<td>P</td>
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<td>222415(33)</td>
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<tr>
<td>222423(33)</td>
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</table>

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

<table>
<thead>
<tr>
<th>Chapter No.</th>
<th>Chapter Name</th>
<th>Hours</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Multimedia Technology and its Applications</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>2.</td>
<td>Text and its Processing Tools</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>3.</td>
<td>Images And Its Processing Tools</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>4.</td>
<td>Digital Sound, Its Capturing And Editing Tools</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>5.</td>
<td>Computer Animation, its basics and Developing Tools</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>6.</td>
<td>Digital Video, its Video Making Tools</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>7.</td>
<td>Development Of A Web Page</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Chapter No.</td>
<td>Chapter Name</td>
<td>Hours</td>
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<tr>
<td>8.</td>
<td>Linking Of HTML Documents And Images</td>
<td>6</td>
<td>10</td>
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<tr>
<td>9.</td>
<td>Tables</td>
<td>4</td>
<td>10</td>
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<tr>
<td>10.</td>
<td>III) Lists</td>
<td>4</td>
<td>10</td>
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<tr>
<td>11.</td>
<td>Developing HTML Forms</td>
<td>4</td>
<td>10</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>64</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

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

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 Tags*
- Table Tags
  - `<TABLE >`, `<TR>`, `<TH>`, `<TD>` Tags
- Spanning Rows and Columns
  - `<ROWSPAN>`, `<COLSPAN>` Tag

Formatting tables using attributes.
- `BORDER`, `BORDERCOLOR`, `NOBORDER`,
  `BGCOLOR`, `BACKGROUND`, `ALIGN`,
  `WIDTH`, `NOWRAP`, `CELLSPACING`, `CELLPADDING`
- 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

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Title</th>
<th>Author, Publisher &amp; Address, Edition, Year of Publication,</th>
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<tbody>
<tr>
<td>10.</td>
<td>Sams Teach Yourself Adobe Photoshop 7 in 24 Hours</td>
<td>Sams Publication</td>
</tr>
<tr>
<td>12.</td>
<td>Sams Teach Yourself Macromedia Flash MX in 24 Hours</td>
<td>Sams Publication</td>
</tr>
<tr>
<td>13.</td>
<td>Multimedia for PC</td>
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<tr>
<td>14.</td>
<td>HTML in 24 hours</td>
<td>BPB Publication</td>
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</tbody>
</table>

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.