

Annexure No.	32 PA
SCAA Dated	29.02.2008

**BHARATHIAR UNIVERSITY, COIMBATORE-46
SCHOOL OF DISTANCE EDUCATION**

**B.Sc. MULTIMEDIA & WEB TECHNOLOGY
SCHEME OF EXAMINATION FOR THE ACADEMIC YEAR 2008-09 (Non-semester)**

Year	Subject	Ex. Hrs.	Max. Marks
I	PART-I: Language-I	3	100
	PART-II: Language-II(English)	3	100
	Allied 1: MATHEMATICAL STRUCTURES FOR COMPUTER SCIENCE	3	100
	Core 1: DATA STRUCTURES AND C PROGRAMMING	3	100
	Core 2: COMPUTER ORGANIZATION & ARCHITECTURE	3	100
II	Core 3: INTRODUCTION TO WEB DESIGN & APPLICATIONS	3	100
	Core 4: INTERNET & JAVA PROGRAMMING	3	100
	Core 5: COMPUTER GRAPHICS	3	100
	Core 6: MULTIMEDIA & ITS APPLICATIONS	3	100
	Core Lab 1: HTML, XML, JAVA SCRIPT LAB	3	100
III	Core 7: ANIMATION TECHNIQUES	3	100
	Core 8: CLIENT/SERVER COMPUTING	3	100
	Core 9: 3Ds MAX ANIMATION	3	100
	Core 10: WEB TECHNOLOGY	3	100
	Core (Lab-2) : WEB TECHNOLOGY(ASP.NET) LAB	3	100
	Total		1500

Course	B.Sc.(MULTIMEDIA AND WEB TECHNOLOGY) –SDE
Effective from	2009-2009 and Onwards
Year	I
Subject	Allied 1: MATHEMATICAL STRUCTURES FOR COMPUTER SCIENCE

Subject Description: This subject deals with mathematical concepts like Matrices, Numerical analysis and Statistical methods for computer science and applications.

Goal: To learn about the mathematical structures for computer based applications.

Objective: On successful completion of this subject the students should have:

- Understanding the concepts of mathematics
- Learning applications of statistical and numerical methods for Computer Science.

Unit I :

Matrices – Introduction – Determination – Inverse of a matrix – Rank of a Matrix - Eigen value Problems

Unit II :

System of Simultaneous Linear algebraic Equation – Gauss elimination, Gauss Jordan, Gauss Seidal methods. The solution of Numerical Algebraic & Transcendental equation – Bisection method – Newton – Raphson method – false position method.

Unit III :

Numerical Difference ion – Newton’s forward Difference - Backward Difference – Startling formula Numerical Integration – Trapezoidal Rule & Simpson’s rule Numerical solutions of ordering differential Equations – Taylor series & Runge kutta method

Unit IV :

Measures of central tendency – Mean Media and Mode – Relationship among mean media and mode. Measures of dispersion – Range, quartile deviation, mean deviation and Standard deviation

Unit V :

Regression and Correlation – Types of relationship – Linear regression – Correlation – Coefficient of correlation – Regression equation of variables – Discrete Probability distribution – Uniform, Binomial & poisson Distribution

Text Book:

1. Engineering Mathematics Volume II – Dr M.K. Venkataraman - NPC
2. Numerical Methods in science & Engineering - M.K. Venkataraman – NPC , Revised Edition -2005
3. Business Statistics - S.P. Gupta & M.P. Gupta **Sultan Chand and Sons**

Reference Book:

1. Numerical methods – E. Balagurusamy Tata MC Graw Hill.
2. Fundamental of Mathematical statistics S C Gupta, V. K. Kapoor **Sultan Chand and Sons**

Course	B.Sc.(MULTIMEDIA AND WEB TECHNOLOGY) –SDE
Effective from	2008-2009 and Onwards
Year	I
Subject	Core 1: DATA STRUCTURES AND C PROGRAMMING

Subject Description: This subject deals with the methods of data structures using C programming language.

Goal: To learn about C programming language using data structural concepts.

Objective: On successful completion of this subject the students should have :

- Writing programming ability on data structures dealing with Stacks, Queues, List, Searching and Sorting algorithms etc.,

UNIT I:

Programming development methodologies – Programming style – Problem solving techniques: Algorithm, Flowchart, Pseudocode - Structure of a C program – C character set – Delimiters – Keywords – Identifiers – Constants – Variables – Rules for defining variables – Data types – Declaring and initializing variables – Type conversion.

Operators and Expressions – Formatted and Unformatted I/O functions – Decision statements – Loop control statements.

UNIT II:

Arrays – String and its standard functions. Pointers – Functions – Preprocessor directives: #define, #include, #ifndef, Predefined macros.

UNIT III:

Structure and Union: Features of structure, Declaration and initialization of structure, Structure within structure, Array of structure, Pointer to structure, Bit fields, Enumerated data types, Union. Files: Streams and file types, Steps for file operation, File I/O, Structures read and write, other file functions, Command line arguments, I/O redirection.

UNIT IV:

Linear data structures: Introduction to data structures – List: Implementations, Traversal, Searching and retrieving an element, Predecessor and Successor, Insertion, Deletion, Sorting, Merging lists – Stack: Representation, Terms, Operations on stack, Implementation. Single linked list, Linked list with and without header, Insertion, Deletion, Double linked list – Queues: Various positions of queue, Representation

UNIT V:

Searching and Sorting – Searching: Linear, Binary. Sorting – Insertion, Selection, Bubble, Quick, Tree, Heap.

TEXT BOOK:

Ashok N Kamthane, “PROGRAMMING AND DATA STRUCTURES” – Pearson Education, First Indian Print 2004, ISBN 81-297-0327-0.

REFERENCE BOOK:

1. E Balagurusamy: Programming in ANSI C, Tata McGraw-Hill, 1998.
2. Ellis Horowitz and Sartaj Sahni: Fundamentals of Data Structure, Galgotia Book Source, 1999.

Course	B.Sc.(MULTIMEDIA AND WEB TECHNOLOGY) –SDE
Effective from	2008-2009 and Onwards
Year	I
Subject	Core 2: COMPUTER ORGANISATION AND ARCHITECTURE

Subject Description: This subject deals with fundamentals of digital computers, Microprocessors and system architecture.

Goal: To learn about computer fundamentals and its organization.

Objective: On successful completion of this subject the students should have:

- Knowledge on digital circuits
- Interfacing of various components

Unit I :

Number System and Binary Codes: Decimal, Binary, Octal, Hexadecimal – Binary addition, Multiplication, Division – Floating point representation, Complements, BCD, Excess3, Gray Code. Arithmetic Circuits: Half adder, Full adder, Parallel binary adder, BCD adder, Half subtractor, Full subtractor, Parallel binary subtractor - Digital Logic: the Basic Gates – NOR, NAND, XOR Gates.

Unit II:

Combinational Logic Circuits: Boolean algebra –Karnaugh map – Canonical form 1 – Construction and properties – Implicants – Don't care combinations - Product of sum, Sum of products, simplifications. Sequential circuits: Flip-Flops: RS, D, JK, T - Multiplexers – Demultiplexers – Decoder – Encoder - Counters.

Unit III :

CENTRAL PROCESSING UNIT: General register organization – control word – examples of Micro operations – Stack organization – Instruction formats – Addressing modes – Data transfer and manipulation control.

Unit IV:

Input – Output Organization: Input – output interface – I/O Bus and Interface – I/O Bus Versus Memory Bus – Isolated Versus Memory – Mapped I/O – Example of I/O Interface. Asynchronous data transfer: Strobe Control and Handshaking – Priority Interrupt: Daisy-Chaining Priority, Parallel Priority Interrupt. Direct Memory Access: DMA Controller, DMA Transfer. Input – Output Processor: CPU-IOP Communication.

Unit V:

Memory Organization: Memory Hierarchy – Main Memory- Associative memory: Hardware Organization, Match Logic, Read Operation, Write Operation. Cache Memory: Associative, Direct, Set-associative Mapping – Writing Into Cache Initialization. Virtual Memory: Address Space and Memory Space, Address Mapping Using Pages, Associative Memory Page Table, Page Replacement.

Text Books:

1. Digital Electronics Circuits and Systems, V.K. PURI, TATA McGRAW-HILL Pub. Company
2. Computer System Architecture, M. MORRIS MANO, Pearson Education Pub, III Edition.

Course	B.Sc.(MULTIMEDIA AND WEB TECHNOLOGY) -SDE
Effective from	2008-2009 and Onwards
Year	II
Subject	Core 3 :INTRODUCTION TO WEB DESIGN AND APPLICATIONS

UNIT I:

Fundamentals of Electronic Mail : Introduction - Email :Advantages and Disadvantages – User ids, Passwords and Email addresses - Message Components - Message Composition - Mailer Features - E mail Inner Workings - Email Management - MIME Types .
Browsing and Publishing ; Introduction – Browser bare bones – Coast – to – Coast surfing – Hyber Text Markup Languages – Web page installation – Web page set up – HTML formatting and hyper link creation .

UNIT II:

The internet : Introduction – internet defined – internet history – the way the internet works – internet congestion – Inter net culture – Business culture and the internet – collaborative computing and the internet .
World Wide Web : introduction the web defined – web browser details – web writing styles – web presentation outline, design , and management – registering web pages.

UNIT III:

Searching the world wide web : introduction – directories , search engines and metasearch engines – search fundamentals – search strategies – how does a search engine works.
Telnet and FTP : introduction – telnet and remote login – File transfer – Computer Viruses .

UNIT IV:

Basic HTML : introduction – semantic versus syntactic – based style types – headers and footers – lists – tables – debugging .
Advanced HTML : introduction – frames – html forms – CGI scripts – dynamic documents – html tools – next generation html – cascading style sheets.

UNIT V:

News groups, Mailing Lists, Chat rooms and MUDs : introduction – news groups and mailing lists history – mailing list fundamentals – newsgroups and mailing lists availability – chat-rooms – MUDs.
Electronic Publishing : introduction – electronic publishing advantages and disadvantages – copy right issues – project Gutenberg and on-line books – electronic journals , magazines and news papers – miscellaneous publishing issues.

TEXT BOOK:

Raymond Greenlaw, Ellen Hepp , Fundamentals of the INTERNET and the World Wide Web, Second Edition , Tata McGRAW –Hill Edition, 2005.

Course	B.Sc. (MULTIMEDIA & WEB TECHNOLOGY) - SDE
Effective from	2008-2009 and Onwards
Year	II
Subject	Core 4: INTERNET AND JAVA PROGRAMMING

UNIT I:

Internet – An Introduction – The World Wide Web – Internet / Web Browsing – Internet addressing – Internet Protocols – Electronic Mail – Basic concepts of HTML .

UNIT II:

Java Programming: Constants, Variables and Data Types – Operators and Expressions – Decision Making and Branching – Decision Making and Looping

UNIT III:

Classes, Objects and Methods – Arrays, Strings and Vectors – Interfaces : Multiple Inheritance

UNIT IV:

Multi threaded Programming: Creating Threads, Extending the Thread class – Stopping and Blocking a Thread – Life cycle of a thread – Using Thread Methods – Thread Priority. Managing Errors and Exceptions – Types of errors – Syntax – Multiple Catch statements

UNIT V:

Applet Programming: Building Applet code – Applet Life cycle – Creating an executable applet – Designing a web page – Running the applet – Passing parameters to applets – Program examples. Graphics programming: Graphics class – Lines and Rectangles – Circles and Ellipses – Drawing Arcs and Polygons.

TEXT BOOK:

E.Balagursamy, “ Programming with Java – A Primer”, Tata McGraw-Hill Publishing Company Limited, Third Edition, 2007

Course	B.Sc.(MULTIMEDIA & WEB TECHNOLOGY) - SDE
Effective from	2008-2009 and Onwards
Year	II
Subject	Core 5:COMPUTER GRAPHICS

Subject Description: This subject deals with Graphics Concepts and methodologies.

Goal: Mathematical Knowledge on Graphics and Technical background.

Objective: To inculcate knowledge on Graphics with various concepts.

UNIT-I: Output Primitives: Points and Lines – Line-Drawing algorithms – Loading frame Buffer – Line function – Circle-Generating algorithms – Ellipse-generating algorithms.

Attributes of Output Primitives: Line Attributes – Curve attributes – Color and Grayscale Levels – Area-fill attributes – Character Attributes.

UNIT-II: 2D Geometric Transformations: Basic Transformations – Matrix Representations – Composite Transformations – Other Transformations. **2D Viewing:** The Viewing Pipeline – Viewing Co-ordinate Reference Frame – Window-to-Viewport Co-ordinate Transformation - 2D Viewing Functions – Clipping Operations – Point, Line, Polygon, Curve, Text and Exterior clippings.

UNIT-III: 3D Concepts: 3D Display Methods – 3D Graphics Packages. **3D Object Representations:** Polygon Surfaces – Curved lines and Surfaces – Quadric Surfaces – Super quadrics – Blobby Objects – Spline representations. **3D Geometric Modeling and Transformations:** Translation – Rotation – Scaling – Other Transformations – Composite Transformations – 3D Transformation functions..

UNIT-IV: Visible-Surface Detection Methods: Classification of Visible-Surface algorithms – Back-Face Detection – Depth-Buffer Method – A-Buffer method- Scan-Line Method – Depth-Sorting Method – BSP-Tree Method – Area-Subdivision Method – Octree Methods – Ray-casting Methods – Curved surfaces – Wire frame Methods – Visibility-Detection functions.

UNIT-V: Illumination Models: Properties of Light – Standard Primaries ad the Chromaticity Diagram – Intuitive color Concepts – RGB Color Model – YIQ Color Model – CMY Color Model – HSV Color Model – Conversion between HSV and RGB models – Color selection ad Applications.

TEXTBOOKS:

1. **COMPUTER GRAPHICS – Donald Hearn, M. Pauline Baker, 2nd edition, PHI.**

REFERENCE BOOKS:

1. **PRINCIPLES OF INTERACTIVE OMPUTER GRAPHICS – Willium M. Newman & Robert F. Sproull, 2007, TMH.**

Course	B.Sc.(MULTIMEDIA & WEB TECHNOLOGY) - SDE
Effective from	2008-2009 and Onwards
Year	II
Subject	Core 6 :MULTIMEDIA & ITS APPLICATIONS

Subject Description : This Subject deals with the Multimedia & its Application

Goal : : To learn about Multimedia

Objective : On Successful Completion of this subject the students should have:

- Media , Sound & Audio , Images , Animation , Video etc.,

UNIT I :

Introduction – Branch Overlapping Aspects of Multimedia Content – Global Structure – Multimedia Literature . Multimedia – Media and Data Streams – Medium .

UNIT II:

Sound/Audio : Basic Sound Concepts – Music –Speech , Images and Graphics : Basic Concepts – Computer Image Processing – Video and Animation : Basic Concepts – Television – Computer Based Animation .

UNIT III:

Data Compression : Storage Space – Coding Requirements – JPEG – MPEG – DVI , Optical Storage Media , Computer Technology – Multimedia Operating System.

UNIT IV:

Networking System : Layers , Protocols and Services , Networks , Metropolitan Area Networks , WAN , Multimedia Communication System.

UNIT V:

User Interfaces, Synchronization , Abstraction for Programming : Abstraction Levels – Libraries – System Software – Toolkit – Higher Programming Languages . Multimedia Application : Introduction – Media Population – Media Composition – Media Communication – Trends.

TEXT BOOK :

Ralf Steinmetz & Klara Nahrstedt – “ Multimedia Computing , Communication & Applications “ Pearson Education.

REFERENCE BOOK:

Fred T,Hofstetter – “ Multimedia Literacy “ – 3rd edition TMH.

COURSE	B.Sc.,(MULTIMEDIA & WEB TECHNOLOGY) - SDE
Effective From	2007-08 Onwards
Year	II
Subject	Core Lab 1 : HTML, XML, Java Scripts

Students are required to write code snippets, which covers the following objectives

- Design Simple Web Pages using standard HTML tags like, HEAD, TITLE, BODY
- Design HTML web pages, which make use of INPUT, META, SCRIPT, FORM, APPLET, BGSOUND, MAP.
- Working with various attributes of standard HTML elements.
- Using Java Script's Window and document objects and their properties and various methods like alert (), eval (), ParseInt () etc. methods to give the dynamic functionality to HTML web pages.
- Writing Java Script snippet which make use of Java Script's inbuilt as well as user defined objects like navigator, Date Array, Event, Number etc.
- Write code which does the form validation in various INPUT elements like TextFiled, Text Area, Password, Selection list etc.
- Writing XML web Documents which make use of XML Declaration, Element Declaration, Attribute Declaration .
- Usage of Internal DTD, External DTD, Entity Declaration.

COURSE	B.Sc.,(MULTIMEDIA & WEB TECHNOLOGY) - SDE
Effective From	2008-09 Onwards
Year	III
Subject	Core 7: ANIMATION TECHNIQUES

Subject Description : This Subject deals with the Animation Techniques.

Goal : To learn about Animation Techniques.

Objective: On Successful Completion of this subject the students should have :

- 2D & 3D Animation , Script Animation , Motion Caption , Audio & Video Format etc.

UNIT I:

What is mean by Animation – Why we need Animation – Types of Animation 2D & 3D – Theory of 2D Animation – Theory of 3D Animation – Difference between Graphics & Animation – Application of 2D & 3D Animation – History of Animation – Software's.

UNIT II:

Traditional 2D Animation Concept – Types of 2D Animation – Techniques of 2D Animation – Color – Text – Formation – Size – Script Animation – Time Line Effects – Application of 2D Animation – Characterization 2D – Principle of 2D Animation – Concept Development.

UNIT III:

3D Animation & its Concepts – Types of 3D Animation – Cycle & Non-Cycle Animation – Theory of Character 3D Animation – 3D Transition Animation – Skeleton & Kinetic 3D Animation – Texturing & Lighting of 3D Animation – 3D Camera Tracking – Applications & Software of 3D Animation.

UNIT IV:

Motion Caption – Formats – Methods – Usages – Motion Capture Software – Merge with Software – Expression – Formats – Methods – Usages – Expression Capture Softwares – Script Animation Usage – Different Language of Script Animation Among the Software.

UNIT V:

Concept Development – Scripting – Story Developing – Output Formats – Audio Formats & Video Formats – Colors – Color Cycle – Color Formats – 3D Production Budgets – 3D Animated Movies – Fields in 3D Animation.

TEXT BOOK:

Joestadaro , Donkim – “ Maya 6.0 Bible “.

Kelly Ldot Murtock – “ 3DS Max Bible “.

Reference Book :

Tom Meade , Shinsaku Arima - “ Maya 8.0 The Complete Reference “ – Tata McGrawhill.

Course	B.Sc.(MULTIMEDIA & WEB TECHNOLOGY) - SDE
Effective from	2008-2009 and Onwards
Year	III
Subject	Core 8: CLIENT / SERVER COMPUTING

Subject Description:

This Subject deals with the C/S Computing

Goal:

To learn about C/S Computing

Objective:

On Successful Completion of this subject the students should have:

- C/S Applications , GUI ETC.,

UNIT I:

Introduction to Client/Server Computing – What is Client/Server Computing – Benefits of Client/Server Computing – Evolution of C/S Computing – Hardware Trends – Software Trends-Evolution of Operating Systems – N/w Trends – Business Considerations..

UNIT II:

Overview of C/S Applications: Components of C/S Applications – Classes of C/S Applications – Categories of C/S Applications . Understanding C/S Computing : Dispelling the Myths – Obstacles – Upfront & Hidden – Open Systems & Standards – Standards – Setting Organizations – Factors of Success .

UNIT III:

The Client Hardware & Software : Client Component – Client Operating Systems – What is GUI – Database Access – Client Software Products : GUI Environments – Converting 3270/5250 Screens – Database Tools – Client Requirements : GUI Design Standards – Open GUI Standards – Interface Independence – Testing Interfaces .

UNIT IV:

The Server : Categories of Servers – Features of Server Machines – Classes of Server Machines – Server Environment : N/W Management Environment – N/W Computing Environment – Extensions – Network Operating System – Loadable Module..

UNIT V:

Server Operating System : OS/2 2.0 – Windows New Technology – Unix Based OS – Server Requirements : Platform Independence – Transaction Processing – Connectivity – Intelligent Database – Stored Procedure – Triggers – Load Leveling – Optimizer – Testing and Diagnostic Tools – Backup & Recovery Mechanisms..

TEXT BOOK:

Dawna Travis Dewire –“Client / Server Computing “ – Tata McGraw Hill.

Course	B.Sc.(MULTIMEDIA & WEB TECHNOLOGY) - SDE
Effective from	2008-2009 and Onwards
Year	III
Subject	Core 9: 3Ds MAX ANIMATION

UNIT I :

Introducing Animations – Types of Animations – Animation Methods – Storyboarding - Introducing 3Ds Max – Interface Basics – Animation Tools & Controls – Creating a Simple Animation – Modifiers in Animations – Applying Modifiers to Animations – Controllers in Animations – Applying Controllers Using the Motions Panel – Applying Controllers Using the Track View Dialog Box.

UNIT II :

Animating using Constraints – Constraints in Animations – Applying Constraints to Animations – Introducing a Hierarchy – Animating Hierarchies – Particle Systems – Basics of Particle System – Creating Particle Systems in 3Ds Max – Types of Particle Systems in 3Ds Max – Creating Basic Particle Systems – Creating Advanced Particle Systems.

UNIT III:

Space Warps and Gizmos – Space Warps – Types of Space Warps in 3Ds Max – Applying Space Warps – Creating a Dynamic Simulation in 3Ds Max – Gizmos – Creating Gizmos – Animating with Lights – Lights in 3Ds Max – Adjusting Light Parameters – Additional Light Controllers – Animating Lights – Applying Lights to Create Animation.

UNIT IV:

Animating with Cameras – Types of Cameras – Camera View Port – Camera Parameters – Cameras in Animations – Animating with the Target and Free Cameras – Camera Matching.

UNIT V:

Rendering Animations – Rendering – Rendering Methods – Render Scene Dialog Box – Rendering Tools – Rendering an Animation – Previewing Animations – Using the RAM Player – Adding Effects to Animations – Environments Effects – Rendering Effects – Video Post .

Text Book :

3D Animation – An overview – Prentice Hall India.

Course	B.Sc.(MULTIMEDIA & WEB TECHNOLOGY) - SDE
Effective from	2008-2009 and Onwards
Year	III
Subject	CORE 10: WEB TECHNOLOGY

Unit I:

HTML: Introduction – HTML Elements – HTML syntax – Document types – html, head, title and body elements – Block level elements – Text level elements – Links – Images – Fonts – Colors – Style Sheets – Character Entities.

Unit II:

Active Server Pages: Introduction – ASP Objects: The Request Object – The Response Object – The Server Object – Using the Request, Response and Server Objects.

Unit III:

ASP Objects: global.asa file – The Application Object – The Session Object – Using Application and Session Objects.

Unit IV:

ASP Components : The Ad Rotator Component – The Browser Capabilities Component – The Content Linking Component – The Content Rotator Component – The Counters Component – The Page Counter Component –The Permission Checker component.

Unit V:

Database Connectivity in ASP: AxtiveX Data Objects – The Connection Object – The Command Object - The Recordset Object – The Record Object – The Stream Object.

Text Books:

1. ASP 3.0: A Beginners Guide, Dave Mercer, Tata McGraw Hill, 2001.
HTML Programmer's Reference, Thomas A. Powell, Dan Whitworth, Tata McGraw Hill, 2001.

Course	B.Sc.(MULTIMEDIA & WEB TECHNOLOGY) - SDE
Effective from	2008-2009 and Onwards
Year	III
Subject	CORE LAB 2: WEB TECHNOLOGY LAB

1. Design a personal web page using HTML.
2. Design a data entry form in HTML.
3. Write a Program in ASP to get data using a form, validate the data and returns the same data for correction if any using the same form.
4. Write a program in ASP to display the Session properties.
5. Write a program in ASP that makes use of Ad Rotator component.
6. Write a program in ASP that makes use of Browser Capabilities component.
7. Write a program in ASP that makes use of Content Rotator component.
8. Write a program in ASP that makes use of page counter component.
9. Write a program in ASP to get the data of students using forms and stores them in database.
10. Write a program in ASP to perform record navigation using a form.