

Introduction:

The Advantages of Interactive Graphics, Representative Uses of Computer Graphics, Classification of Hardware and software for Computer Graphics, Conceptual Framework for Interactive Graphics, Overview, Scan: Converting Lines, Converting Circles, Converting Ellipses

Display Technologies:

Raster-Scan Display System, Video Controller, Random-Scan Display Processor, Input Devices for Operator Interaction, Image Scanners, Working Exposure on Graphics Tools like Dream Weaver, 3D Effects. Clipping: Sutherland- Cohen Algorithm, Cyrus-Beck Algorithm, Midpoint Subdivision Algorithm.

Geometrical Transformation:

2-D Transformation, Homogeneous Coordinates and Matrix Representation of 2D Transformations, Composition of 2D Transformations, Window-to-Viewport Transformations.

Curves and Surfaces

Parametric and non-parametric curves and their representations, Cubic splines, Bezier and B-splines, Parametric surfaces, Surfaces of revolution, Sweep surfaces, Quadric surfaces, Bilinear surfaces, B-spline and Bezier surfaces, Generalized cylinders and cones, Polygon mesh and wire-frames.

References:

1. Computer Graphics: Hern and Baker
2. Procedural elements in Computer Graphics: David F. Rogers
3. Mathematical Elements for Computer Graphics: David F. Rogers and J.A.Adams

BCA122 Multimedia

Introduction:

Introduction to Multimedia, Multimedia Information, Multimedia Objects, Multimedia in business and work, Convergence of Computer, Communication and Entertainment products.

Stages of Multimedia Projects:

Multimedia hardware, Memory & storage devices, Communication devices, Multimedia software's, presentation tools, Tools for object generations, Video, Sound, Image capturing, Authoring tools, Card and page based authoring tools.

Multimedia Building Blocks:

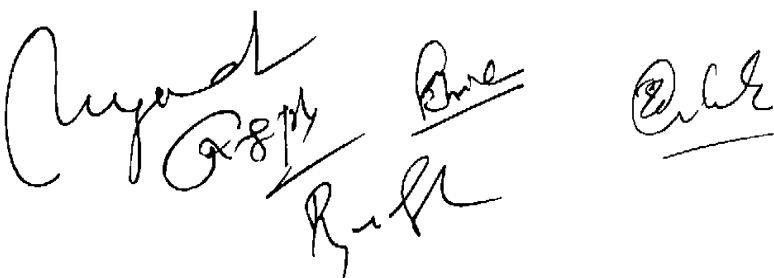
Text, Sound MIDI, Digital Audio, Audio file formats, MIDI under windows environment, Audio & Video Capture.

Data Compression:

Huffman Coding, Shannon Fano Algorithm, Huffman Algorithms, Adaptive Coding, Arithmetic Coding, Higher Order Modeling, Finite Context Modeling, Dictionary based Compression, Sliding Window Compression, LZ77, LZW compression, Compression, Compression ratio, Loss less & Lossy compression.

Speech Compression & Synthesis:

Digital Audio concepts, Sampling Variables, Loss less compression of sound, Loss compression & silence compression

The bottom of the page features several handwritten signatures and initials in black ink. On the left, there is a large, stylized signature that appears to be 'Cyrus'. To its right, there are several other signatures and initials, including one that looks like 'Ruth' and another that is more abstract. The handwriting is fluid and cursive.

Multimedia Authoring Tools

Project editor; Topic editor; Hot-spot editor; Developing a multimedia title; Multimedia text authoring systems; Usage of authoring tools

References:

1. Multimedia: Computing, Communications & Applications – Nahrstedt & Steinmetz
2. Computer Speech Processing – Fallside F.
3. Speech Analysis, Synthesis & Perception – Flanagan, J.L. Hypertext & Hypermedia- Nielsen J.

BCA123 Data and Communication Networks**Basic Concepts:**

Components of data communication, distributed processing, standards and organizations. Line configuration, topology, Transmission mode, and categories of networks. OSI and TCP/IP Models. Layers and their functions, comparison of models. Digital Transmission: Interfaces and Modems: DTE-DCE Interface, Modems, Cable modems.

Transmission Media:

Guided and unguided, Attenuation, distortion, noise, throughput, propagation speed and time, wavelength, Shannon capacity, comparison of media.

Telephony:

Multiplexing, error detection and correction: Many to one, One to many, WDM, TDM, FDM, Circuit switching, packet switching and message switching. Data link control protocols: Line discipline, flow control, error control, synchronous and asynchronous protocols, character and bit oriented protocols, Link access procedures. Point to point controls: Transmission states, PPP layers, LCP, Authentication, NCP. ISDN: Services, Historical outline, subscriber's access, ISDN Layers and broadcast ISDN.

Devices:

Repeaters, bridges, gateways, routers, The Network Layer; Design issues, Routing algorithms, Congestion control Algorithms, Quality of service, Internetworking, Network-Layer in the internet. Transport and upper layers in OSI Model: Transport layer functions, connection management, functions of session layers, presentation layer and application layer.

References:

1. Computer Networks :Tanenbaum, A.S
2. Data Communication and Networking : Forouzan, B.A

BCA124 Internet and Web Programming**Internet and WWW:**

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 (WWW) : World Wide Web and its evolution, uniform resource locator (URL). browsers - internet explorer, netscape navigator, opera, firefox, chrome, mozilla. Search engine, web saver - apache, IIS, proxy server, HTTP protocol.

Web Programming:

Programming in Java: Core Java: Introduction, Operator, Data type, Variable, Arrays, Control Statements, Methods & Classes, Inheritance, Package and Interface, Exception Handling, Multithread

programming, I/O, Java Applet, String handling, Networking, Event handling, Introduction to AWT, AWT controls, Layout managers, Menus, Images, Graphics.

Communication Issues, the Client, Multi-departmental & Large scale Websites, Quality Assurance and testing, Technological advances and Impact on Web Teams.

HTML:

Formatting Tags, Links, List, Tables, Frames, forms, Comments in HTML, DHTML.

JavaScript:

Introduction, Documents, Documents, forms, Statements, functions, objects in JavaScript, Events and Event Handling, Arrays, FORMS, Buttons, Checkboxes, Text fields and Text areas.

XML:

Introduction, Displaying an XML Document, Data Interchange with an XML document, Document type definitions, Parsers using XML, Client-side usage, Server Side usage.

Common Gateway Interface (CGI), PERL, RMI, COM/DCOM, VBScript, Active Server Pages (ASP).

References:

1. Shishir Gundavarma, "CGI Programming on the World Wide Web", O'Reilly & Associate
2. DON Box, "Essential COM", Addison Wesley.
3. Greg Buczek, "ASP Developer's Guide", TMH.



