SYLLABUS

I. INTRODUCTION TO MULTIMEDIA (CREDITS: 6)

Section-A

*Unit I:*Multimedia Hardware: System Devices, Input Devices, Output Devices, Multimedia Storage Systems, Memory and storage devices. Configuration of a multimedia Computer,Multimedia Software: Fundamentals of Software, Basic Unit of Software, Tools Menu, Requirements for Multimedia Software. Multimedia Operating Systems: Operating System Concepts, Popular Operating Systems, Window Operating Systems, Multimedia Operating systems, Continuous Media resources Model, Operating System Process management, Operating System Functions

Unit II: Multimedia Communication Systems: Basic concept of Communication Systems, Benefits of Computer Networks, Computer Network Devices, ISI/OSI Model in Communication Networks, Functions of Different Layers, Multimedia Communication Systems, Application Subsystem, Multimedia Application, Content Distribution Systems: Introduction, Benefits of using Content Distribution Systems, Role of Satellite in Distribution System, Image Formats, Storing an Image in a Digital Medium, Digital Image Formats, Digital Video Formats, Digital Audio Formats, Digital Text Formats, Television Formats, PAL-Phase Alternating Line, NTSC-National Television Standard Committee, HD-High Definition, Radio Formats, Technical formats of Radio Audio output, Internet Formats ,CD/DVD/Hard Disk/Pen drive/External Hard Disk, Steps of writing a CD/DVD using Nero

*Unit III:*Desktop Publishing: Introduction, Digital Artist and Graphic Designer, Applications of Desktop Publishing, Job prospects after learning Desktop Publishing, The Basic Software used in Desktop Publishing, Other open source raster and vector software's, Commercial software's for Image Editing and Vector based designs, Photoshop, CorelDraw, Illustrator, PageMaker/In-design,Commonly used terms and elements of Desktop Publishing, Resolution, Future of Desktop Publishing, Multimedia Animation and Special Effects: Introduction, Basic Elements of Multimedia, Introduction to Animation: Definition and Perception, Terminology in Animation, Introduction to 2D Animation: Process of 2D Animation, Introduction to 3D Animation: Process of 3D Animation, Introduction to Special Effects, Career in Animation Industry

*Unit IV:*Social networking and publishing: Introduction, Advantages of using Social Media Services, Social Networking Interfaces Using Google, What is Google?, Steps of Using Google, Gmail: Uses of Gmail, Steps for creating an E-mail account using Gmail, Google group: Advantages of Google Groups, Steps of Google groups, What is YouTube?, Benefits of YouTube, Steps of YouTube, What is Facebook?, Benefits of Facebook, Steps to open a Face book Account, What is Instagram? Benefits of Instagram, Steps to open an Instagram Account ,

What is Twitter? Benefits of Twitter, Steps to open a Twitter Account , What is Blogging? Benefits of Blogging, Creating your own Blog, Characteristics of a Blog, Blog and Communication, Steps to start Blogging, Components of a Blog, The Choice of the Audience and your Role as a Blogger, Popular Social Networking Sites, Whatsapp, Messenger (Facebook) , Hangout (Google), LinkedIn, Tumblr.

Section-B

Unit V: Audio Fundamentals:What is Audio?, What is Sound?, The Audio Quality, Distortion, The Audio Studio, The Audio Equipment, Bi-directional Microphone, Audio Recording Device, Digital Audio File Formats, Understanding Image & Video: Introduction, What is an Image?, Overview of Image, Types of images, Raster Images, Resolution of Images, Formats of image, What is "colour"?, What is a "video"?, Characteristic of video, Film and Digital Photography: Introduction, What is "Photography"?, Overview of photography, Technology of Photography, Camera and lenses, Techniques of photography, Composition, Types of shots, Lighting, Media Industry: Structure and Strategies, Organisational Structure of Media , Basic Editorial setup of Print Media , Magazines and its organisational structure , Basic Editorial set up of Magazine, Difference in Operation in Magazines and Newspapers, Features of a News agency, Editorial desk of News Agencies , Growth of the News Agencies in India , Basic Editorial setup of a Radio Station, Television News room and it's Editorial setup

Unit VI: Audio Video Program Production: Introduction, Video Production, Audio Production, What is the Production Process?, Basics of Audio-Video Production, The pre-production phase, Production Methods, The video's concept, The Production Phase, Required for the project, Tips for Recording Audio:, Tips for Recording Video:, While recording the video, The Post-Production, Compositing and Audio-Video Editing: Introduction, Audio Visual Editing, Process of editing, Ingest, First Assembly, Rough Cut, Fine Cut, Final Cut, Web Design and Publishing: Introduction, Web Design Programming, Introduction to HTML, Web Site Development & Publishing, Website Designing , Web Designing Tools, Web Page Anatomy, Web development tools, Website Publishing, Prerequisites for Website Publishing , Website URL Registration , Registering Domain Name , Website Hosting

Unit VII: Ownership of Media: Introduction, The pluralist theory of media ownership, Theories of media ownership and control, Types of media ownership, Marxist critique of media ownership and control, The media and ideology, Diversification, synergy and technological convergence, Global Trends in ownership and control, The Ownership Pattern of Newspaper in India,Media as Business: Introduction, Scaling of Business Models, Value in Content Production and Distribution, Value of Advertising, Media Personalization, Evolution of Media industry

Unit VIII: Media Economics: Introduction, Some economic principles of media structure, The effects of Ownership, Market Media Reach, Distinctive features of Media Economics, Mass

Media Governance, Purposes and forms of governance, Media regulation and self-regulation, Media policy and policy making, Alternative mechanisms of media accountability and regulation, Income sources of Different Media, The role of Media in boosting Advertising, Newspapers and their sources of income, Television and their sources of income, Television Commercials, Direct Selling Advertising, Political Advertisements, Sources of income for a Radio station, Sources of income for a Magazine, Outdoor Medium, Yellow Pages, Sources of income through the medium of Internet

I. DIGITAL IMAGING (CREDITS: 4)

Section-A

Unit I: Graphics Design: Introduction, Graphics, Historical Background of Broadcast Graphics, Principles of Design, Design Elements, Fundamentals of Computer Graphics, Print Graphics and TV Graphics, Understanding Digital Images: Introduction, A Brief History of Designing, Pixel and Bitmaps, Resolution and Pixel Dimension, Aspect ratio 42, Understanding image File Formats, Optimising Digital Images

Unit II: Understanding Color: Introduction to Color, Color Theory, Color Harmony, Color Contrast, Cool and Warm Colors, Additive And Subtractive Colors Modes, Color And Graphics, Colors For The Web, Converting Image Between Color Modes, Visual concepts and Graphics preparation: Introduction, Origin Of Broadcast Graphics, Graphic Designing, Implications for Design, Graphic Requirement for TV Program, Preparing TV Graphics, Title Safe And Action Safe Margin, Vector Graphics, Raster Graphics , Visual Effects (VFX) Design , Illustrations and their Use In Graphic Designing

Unit III: Introduction to Digital Composition: Introduction, Technical Process of Digital Composition,Generation of Images through Photography and Computer Graphics, Elements of a Digital Composition, Printing Techniques of a Digital Composition, Use of Digital Elements in Digital Layouts: Introduction, A Brief History of Designing Design Elements, Line, Scale, Colour, Shape, Negative Space, Symmetry, Transparency, Texture, Balance, Hierarchy, Contrast, Framing, Grid, Randomness, Repetition, Rules, Movement, Depth, Typography, Composition, Basics of Image Editing: Introduction, Scanning and Capturing Images, Image Editing, Colour Adjustments, Masking

Section-B

Unit IV: Raster,Vector Graphics & Typography: Introduction, Raster Graphics, Resolution, Vector Graphics, Properties of Vector Graphics, Properties of Vector Design, Software used in Vector Graphics, Vector Graphics in various Industries, Difference between Raster Graphics and Vector Graphics, Typography, Properties of Typography, Steps of Creating Typography

Unit V: Introduction to Krita: Introduction, Use of Krita, Job Prospects after learning Krita, Tools of Krita, Menu Bars of Krita, Familiarization to Inkscape:Introduction, A Brief History of Designing, Tools of Inkscape, File Menu, Edit Menu, Duplicate, Delete, Create Guides around the page, View Menu, Illustration and Vector Design using Inkscape: Introduction, Menu Bars of Inkscape, Object Menu, Path Menu, Text Menu, Filters Menu, Extension Menu

Unit VI: Working with Digital Images: Introduction, Structure of digital images, Four-Channel Images, Attributes of digital images, Digitizing Images, Image Resolution, Image Aspect Ratio, Pixel Aspect Ratio, Display Aspect Ratio, Managing file formats for Images: Introduction, Image file formats, Photographic Images vs. Graphics, Compression, EXR, File Formats, Dots per inch (dpi), Image Editing with GIMP: Introduction, What is GIMP?, Features and capabilities, Basic GIMP Concepts, Working with Digital Camera Photos, Creating a Contrast Mask, Layer Masks, Selective Colorization Example, Basic Color Curves, Techniques behind VFX: Introduction, Visual Effects, Digital Compositing, Computer-Generated Imagery, Preparing for your visual effects shot, Tips for VFX Artists in Preproduction

I. 2D ANIMATION (CREDITS: 4)

Section-A

Unit I: **Concept of 2D Animation:** Introduction, Meaning of Animation, Types of Animation, Principles of Animation, Various steps for creating a 2D Animation, **Drawing Concepts:** Introduction, Documentation, Sketch Book, Different types of Art Forms, Basic drawing categories, Drawing methods, Different types of Drawing, **Basics of color theory:** Introduction, Three dimensions of color, Basic techniques for creating color schemes, Color vision principles, Color Expressions, Color wheel and its purpose, **Incorporating Sound into 2D Animation:** process for digitizing sound, important audio components, sources for audio clips, functions of audio component, considerations when using audio in animation, Synchronizing animation to speech

*Unit II:***Basic of Sketching**: Introduction, The Pencil, Types of Pencil, Pencil holding techniques, Sketching, Observation, Still life drawing, Composition, Element of Composition, **Drawing:** Types of Drawing Media: Dry Media, Graphite, Charcoal, Pastels, Wet media, Painting: Encaustic, Tempera, Fresco, Oil, Acrylic Paint, Watercolour, Water Colour Techniques, Mixed Media Techniques for Collage, **Exploration of 2D elements,** Design Elements, **Pixel & Resolution:**Introduction, Pixels and Resolution, Resolution, Megapixels, Aspect ratio, True Color, Raster(Bitmap), Vector (Lines/Calculated Points), Types of bitmap images, Characteristics of bitmap data, How to convert bitmap data to vector data and back

Unit III: **Working with Visual Images**: Introduction, Design elements, Design principles, Complex shapes, Visual elements of motion graphics, Dot in motion graphics, Line in motion graphics, Surfaces and lighting in motion graphics, Space in motion graphics, **Story Boarding**: Introduction, Different types of shots, long shot, medium shot, closeup, extreme closeup, master shot, depicting camera movement, creating story boarding.

Unit IV: **Tiles & Credit Making:** Introduction, Basic design issues, Image resolution, Designing over space, Semantic analysis, Pragmatic analysis, Design structure, Designing over time, Credit Making, Rolling Credit Basics, **Stop motion animation:** Introduction, Character, Set and Props, PowToon Basics, Menu panel, Basic workflow

Section-B

Unit V: **Painting & Animating Practical:** Introduction, Ink and Paint, Choosing the right software, Technique for scanning inked drawings, Scanning via GIMP, Edit Scanned Image,

Scale image, Preparing the image, Path tracing, Tracing the image, Numbering, Paint, Paint using GIMP

Unit VI: **Drawing Concepts,** Understanding background composition, Hardware, Software, Creating the margin, Steps to plan a background, **2D Animation techniques:** Introduction, Hardware, Software, Pencil 2D animation, Colour, Layers, Camera Layer, Add and delete layers, Rename Layer, Resize image, Import in pencil, Animating, **2D Animation for portfolio making,** Portfolio making rules, Steps to make animated short film

Unit VII: **Digital Layout Creation:** Introduction, GIMP Installation, GIMP-Main Window, GIMP Basics, **Professional Image Editing:** Introduction, Colour Tool, Blur filters, Noise filters, edge detect filters, enhance filters, Generic filters, Glass effects filters, Light effects filters, Distort filters, Artistic filters, Map filters, Rendering filters, Combine filters

Unit VIII: **Advertising and Illustration:** Introduction, Pixlr editor, Getting started, cropping an image, Resizing an image, Rotating an image, Steps to save an image, Working with layers, Adding text in a new layer, Using layers to make a composite image, Advanced techniques, Using Gaussian Blur to remove the Moire effect, Adjusting hue, saturation, adjusting the levels manually, Using the colour curves to modify an image, Removing a background to create a transparent image, Pixlr express, **Vector Composition and 2D Animation:** Introduction, Getting started, Animation Basics, Understanding the timeline, Adding layers, Animate the stem, adding the petals, Hiding the petals.

DIGITAL IMAGING LAB (CREDITS:2)

1. Creating a 3D ball using Krita
2. Create a 3D button using Krita
3. Create a Pen design using Krita
4. Create a Jewellery Design using Krita
5. Create a Digital Painting using Krita
6. Create a Greeting Card Design using Krita
7. Create a Visiting Card Design using Krita
8. Practical- Graphics for TV Production

    Birth of Graphic Design in Television Industry

    Role of Graphic Designer in the Television Industry

    Use of Computer and Software's for design in the Television Industry

    Output Formats for the Television Industry

    Still Logo Design – Setting the logo design in Krita

    2D Animated Globe Logo – Synfig Studio

    3D Animated Logo - Blender

    Still Header and Footer Design - Krita

    Text Animation using Blender
9. Practical- Create colourful Vector character art in Krita

    Steps for Character Design

    Krita – Open Source Software for Designing

    Practical – Technique 1 – Drawing and Tracing in Krita

    Inkscape – Open Source Software for Designing

    Practical – Technique 2 - Vectoring

    Total Structure of a Character Drawing

    Character Anatomy

    Practical – Technique 2 – Outline Vector Drawing

    Face

    Practical – Technique 3 – Stroke Path using Brush

    Eyes, Eye Colour

    Practical – Technique 5 – Readymade vector shapes with filled colours

    Nose, Lips, Ear, Eyebrows, Hairline, Hands, Legs, Complete Character Design, Different formats of output
10. Practical- Create Texture tricks with Inkscape

Texture Design – Requirement of Industry standard , Types of Textures, Inkscape – Open, Source Software for Design and Texturing , Create Base Texture using in-built Inkscape Options, Creating Textures using Combined Options of Inkscape, Textured Text with Background, Create a Patterned Texture in Inkscape , Converting a Bitmap into Tiled Clones

11. Practical- Create T-shirt design with vector art of Tiger

Vector Art, Steps in Creating a T-Shirt design, Creating T-Shirt Design using Tiger Picture in Vector Art using Krita, Printing Techniques of a T-Shirt, Professional guidance for T-Shirt design, Create a 3D style of texture, Create a texture using combination of shapes, Create textures with various tools, Create a digital painting texture

2D ANIMATION LAB (CREDITS: 2)

The programs in lab will be based on the contents covered in the theory syllabus.