

FACULTY OF VISUAL ARTS & PERFORMING ARTS

SYLLABUS

FOR

**M.DESIGN (MULTIMEDIA)
(SEMESTER: I – IV)**

Examination: 2019-20



**GURU NANAK DEV UNIVERSITY
AMRITSAR**

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**(ii) Subject to change in the syllabi at any time.
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M.DESIGN (MULTIMEDIA) (SEMESTER – I)

Scheme of Studies**Working Schedule:** Total Four Semesters

Two semesters Per Session

19 Weeks per Semester

30 Hours per Week

570 Hours per Semester

Semester – I:						
	Subjects	Time Allocation	Theory	Practical	Time for Exams	Total Marks
Paper – I	Final Cut Pro	150 Hrs.	40	60	3 Hrs	100
Paper – II	Motion	150 Hrs.	40	60	3 Hrs	100
Paper – III	Sound Recording and Editing Software	125 Hrs.	40	60	3 Hrs	100
Paper – IV	Digital Cinematography	125 Hrs.	40	60	3 Hrs	100
					Total	400

M.DESIGN (MULTIMEDIA) (SEMESTER – I)**PAPER – I: FINAL CUT PRO
(Theory)****Time: 3 Hrs.****Total Marks: 100
Theory: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Nonlinear and Nondestructive Editing, Video Formats Compatible with Final Cut Pro, Audio Formats Compatible with Final Cut Pro, Video Format Basics, Time code, codecs.

- Exploring the Interface, Organizing Optimizing & Analyzing Media, Lesson, Importing from a Camera Archive & iMovie, Rating Deleting & Transcoding, Building a Rough Cut, Replacing Clips & 3 Point Editing, Adjusting Clip Timing.

SECTION-B

Understanding Projects, Clips, and Sequences, Building Blocks of Projects, Creating and Organizing Projects, Working with Projects, Connection between Clips and Media Files, File naming Considerations.

- Using the Trimming Tools, Working with Storylines, Editing the Soundtrack, Adding Markers & Dolby Surround, Enhancing the Soundtrack, Creating Hold Frames & Controlling Video Quality, Applying & Modifying Transitions, Applying & Animating Effects, Transforming Images.

SECTION-C

Overview of the Final Cut Pro Interface, Browser basics, Viewer Basics, Canvas Basics, Timeline and toolbox.

M.DESIGN (MULTIMEDIA) (SEMESTER – I)

SECTION-D

Preferences and presets, Getting Media into FCP, Working with view and clips, Time line and canvas, Sequence and Editing, Trimming Edits, Transitions, Compositing and Special Effects, Rendering, Final Output, Effects and FX Builder

- Trimming Cropping & Distorting Images, Applying & Animating Titles, Working with Themes & Placeholders, Balancing & Matching Color Lesson, Use of Color & Shape Masks.
- Publishing to Apple Devices, Publishing to Blu-ray Vimeo & QuickTime, Exporting using Compressor Post-Production Workflow and Industry Workflow.

Books Recommended:

- Apple Pro Training Series: Getting Started with Final Cut Guide, Adobe Reader by Matthew Geller
- Apple Pro Training Series: Final Cut Express 4 by Diana Weynand
- Apple Pro Training Series: Final Cut Pro 6: Beyond the Basics by Michael Wohl
- Apple Pro Training Series: Motion Graphics and Effects in Final Cut Studio 2 by Mark Spencer, Jem Schofield
- Apple Pro Training Series: Final Cut Pro 6 by Diana Weynand

M.DESIGN (MULTIMEDIA) (SEMESTER – I)

**PAPER – I: FINAL CUT PRO
(Practical)****Practical: 60****SECTION-A**

Nonlinear and Nondestructive Editing, Video Formats Compatible with Final Cut Pro, Audio Formats Compatible with Final Cut Pro, Video Format Basics, Time code, codecs.

- Exploring the Interface, Organizing Optimizing & Analyzing Media, Lesson, Importing from a Camera Archive & iMovie, Rating Deleting & Transcoding, Building a Rough Cut, Replacing Clips & 3 Point Editing, Adjusting Clip Timing.

SECTION-B

Understanding Projects, Clips, and Sequences, Building Blocks of Projects, Creating and Organizing Projects, Working with Projects, Connection between Clips and Media Files, File naming Considerations.

- Using the Trimming Tools, Working with Storylines, Editing the Soundtrack, Adding Markers & Dolby Surround, Enhancing the Soundtrack, Creating Hold Frames & Controlling Video Quality, Applying & Modifying Transitions, Applying & Animating Effects, Transforming Images.

SECTION-C

Overview of the Final Cut Pro Interface, Browser basics, Viewer Basics, Canvas Basics, Timeline and toolbox.

SECTION-D

Preferences and presets, Getting Media into FCP, Working with view and clips, Time line and canvas, Sequence and Editing, Trimming Edits, Transitions, Compositing and Special Effects, Rendering, Final Output, Effects and FX Builder.

- Trimming Cropping & Distorting Images, Applying & Animating Titles, Working with Themes & Placeholders, Balancing & Matching Color Lesson, Use of Color & Shape Masks.
- Publishing to Apple Devices, Publishing to Blu-ray Vimeo & QuickTime, Exporting using Compressor Post-Production Workflow and Industry Workflow.

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- Apple Pro Training Series: Final Cut Express 4 by Diana Weynand
- Apple Pro Training Series: Final Cut Pro 6: Beyond the Basics by Michael Wohl
- Apple Pro Training Series: Motion Graphics and Effects in Final Cut Studio 2 by Mark Spencer, Jem Schofield
- Apple Pro Training Series: Final Cut Pro 6 by Diana Weynand

M.DESIGN (MULTIMEDIA) (SEMESTER – I)

**PAPER – II: MOTION
(Theory)****Time: 3 Hrs.****Total Marks: 100
Theory: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

The Motion Interface, Workspace Overview, Utility Window, Toolbar, Canvas, Project Pane, Timing Pane, Window Arrangements, HUD

User Interface Controls, Toolbar Controls, Slider Controls, Coordinate Controls, Dial Value Field, Activation Checkbox, Menus, Source Well, Color Controls, Gradient Controls Mini-Curve Editor, Generic Inspector Controls, Rasterization Indicator

SECTION-B

Creating and Managing Projects, Creating and Managing Projects, Basic Compositing, Using the Timeline, Using Behaviors, Key frames and Curves, Using the Record Button, Applying Movement to a Clip

SECTION-C

Animating Filters ,Animating Behaviors, Animation Menu, The Reset Button, Animating in the Timeline, Modifying Key frames in the Timeline, Animating in the Key frame Editor, Filtering the Parameter List, Modifying Key frames, Modifying Curves, Mini-Curve Editor, Animating on the Fly, Key frame Thinning

Working with Particles, Using the Replicator, Using Replicators in 3D Space,

M.DESIGN (MULTIMEDIA) (SEMESTER – I)

SECTION-D

Creating and Editing Text, Animating Text, Text Animation and Text Sequence Behaviors
Sequence Text Behavior, Scroll Text Behavior, Text Tracking Behavior, Type On Behavior
Preset Text Sequence Behaviors, Saving a Modified Text Behavior to the Library
Using Other Behaviors with Text, Using Behaviors to Animate Text in 3D
Animating Text with Key frames, Animating with the Adjust Glyph Tool, Using Live Fonts

Generators, Filters, Using Shapes, Masks, and Paint Strokes, 3D Compositing, Motion Tracking,
Working with Audio, Key framing Level and Pan Changes, Cross fading Audio Tracks,
Outputting Motion Projects

Books Recommended:

- Apple Pro Training Series: Motion 4 By Mark Spencer
- Apple Pro Training Series: Motion 3 By Damian Allen, Mark Spencer, Bryce Button, Tony Huet
- Apple Pro Training Series: Encyclopedia of Visual Effects By Damian Allen, Brian Connor

M.DESIGN (MULTIMEDIA) (SEMESTER – I)

**PAPER – II: MOTION
(Practical)**

Practical: 60

SECTION-A

The Motion Interface, Workspace Overview, Utility Window, Toolbar, Canvas, Project Pane, Timing Pane, Window Arrangements, HUD

User Interface Controls, Toolbar Controls, Slider Controls, Coordinate Controls, Dial Value Field, Activation Checkbox, Menus, Source Well, Color Controls, Gradient Controls Mini-Curve Editor, Generic Inspector Controls, Rasterization Indicator

SECTION-B

Creating and Managing Projects, Creating and Managing Projects, Basic Compositing, Using the Timeline, Using Behaviors, Key frames and Curves, Using the Record Button, Applying Movement to a Clip

SECTION-C

Animating Filters ,Animating Behaviors, Animation Menu, The Reset Button, Animating in the Timeline, Modifying Key frames in the Timeline, Animating in the Key frame Editor, Filtering the Parameter List, Modifying Key frames, Modifying Curves, Mini-Curve Editor, Animating on the Fly, Key frame Thinning

Working with Particles, Using the Replicator, Using Replicators in 3D Space,

SECTION-D

Creating and Editing Text, Animating Text, Text Animation and Text Sequence Behaviors Sequence Text Behavior, Scroll Text Behavior, Text Tracking Behavior, Type On Behavior Preset Text Sequence Behaviors, Saving a Modified Text Behavior to the Library Using Other Behaviors with Text, Using Behaviors to Animate Text in 3D Animating Text with Key frames, Animating with the Adjust Glyph Tool, Using Live Fonts

Generators, Filters, Using Shapes, Masks, and Paint Strokes, 3D Compositing, Motion Tracking, Working with Audio, Key framing Level and Pan Changes, Cross fading Audio Tracks, Outputting Motion Projects

Books Recommended:

- Apple Pro Training Series: Motion 4 By Mark Spencer
- Apple Pro Training Series: Motion 3 By Damian Allen, Mark Spencer, Bryce Button, Tony Huet
- Apple Pro Training Series: Encyclopedia of Visual Effects By Damian Allen, Brian Connor

M.DESIGN (MULTIMEDIA) (SEMESTER – I)

PAPER III: SOUND RECORDING AND EDITING SOFTWARE**(Theory)****Time: 3 Hrs.****Total Marks: 100****Theory: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

- Introduction to Sound Editing Software's: Nuendo, Cubase and Sound Forge
- Basic features and installation of Sound editing software's
- Basics of Sound Editing and Mixing in Software

SECTION-B

- Working with various Sound editing software's
- Working with various Audio effects in Software
- VST connections, setting up Input and Output buses

SECTION-C

- Recording: Background, Basic recording methods, Audio recording specifics, MIDI Recording Specifics, Options and Settings

SECTION-D

- Object and Range selection, Advanced Editing, MIDI Editing, Track Sheet and Exporting Audio Mix Down
- Working with various Audio formats

M.DESIGN (MULTIMEDIA) (SEMESTER – I)

**PAPER III: SOUND RECORDING AND EDITING SOFTWARE
(Practical)**

Practical: 60

SECTION-A

- Introduction to Sound Editing Software's: Nuendo, Cubase and Sound Forge
- Basic features and installation of Sound editing software's
- Basics of Sound Editing and Mixing in Software

SECTION-B

- Working with various Sound editing software's
- Working with various Audio effects in Software
- VST connections, setting up Input and Output buses

SECTION-C

- Recording: Background, Basic recording methods, Audio recording specifics, MIDI Recording Specifics, Options and Settings

SECTION-D

- Object and Range selection, Advanced Editing, MIDI Editing, Track Sheet and Exporting Audio Mix Down
- Working with various Audio formats

M.DESIGN (MULTIMEDIA) (SEMESTER – I)

PAPER – IV: DIGITAL CINEMATOGRAPHY
(Theory)

Time: 3 Hrs.

Total Marks: 100

Theory: 40

Instructions for the Paper Setters:-

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Basic objective of understanding through establishing a methodology for lighting design. Understanding of shading techniques and applications. Composition through lighting, camera and color. Creating an on-line "process book" in HTML format that documents the conceptual, technical, and artistic development throughout the semester. Use computer graphics as a medium by developing artistic and technical skills and integrating them.

Introduction, Exposure meters, Tonal Range, Exposure Control, Image Stability, Greater perceived Detail, Repeatability, Portability.

Composition and the rule of thirds, Framing using the rule of thirds, Framing using the sixths, Diagonal framing, Complex and combined composition.

SECTION-B

Understanding of basic terms like Auteur, Diegesis, Editing, Flashback, Flashforward, Focus, Geners, Misc-En-Scene, Story / Plot, Scene / Sequence & Shot.

Lenses and perspective, Frame size and focal length, Perspective, Focal length and emotional involvement, normal focal length lens.

Aspect ratios, Creating a Look, Deciding what you want, Sharp or Soft, Cold or Warm, Saturation and Desaturation, Skin tone control, The Film Look

SECTION-C

Lighting & Lighting Ratios, Useful Styles, Soft Lighting, Hard Lighting, Colored sources, Defining & visualizing a lighting ratio, Different lighting ratios for film and television.

- Lighting, Psychology of light Human Vision, Light Sources Setting Mood through Lighting, Lighting as a Story Element, Visual Environment Dealing with Natural Lighting Directional Effect of Light, Lighting design process Controlling the Intensity of Light, Color and Color Temperature of Light Three-point lighting, High-Key lighting & Low Key lighting Indoor and Outdoor Lighting Reflectors, Role of reflectors

M.DESIGN (MULTIMEDIA) (SEMESTER – I)

SECTION-D

Color Temperature, Filters and Mired shift values, color temperature meter, Location sources, correcting lamps

Filters, Camera filters, Matching shots, Enhancing filter, fluorescent light correction, polar screens, old filter factors, the pan glass

Technology, Digital Tonal Range, Image Resolution, Required Resolution for HD, Data Quantity, High-Definition, The knowledge base, Editing and post production, formats to shoot, Progressive or interlace, Recording formats, HDV.

HD Cinematography, Lighting and exposing for HD, Setting color balance, Lenses, HD effects other crafts like Art and design, Costume, Makeup and hair, Sound, Script.

The Future-High Definition–HD, Three-chip cameras, Single-chip cameras, Digital presentation.

Books References:

- High Definition Cinematography by Paul Wheeler
- Digital Cinematography by Paul Wheeler
- Practical Cinematography by Paul Wheeler.

M.DESIGN (MULTIMEDIA) (SEMESTER – I)

**PAPER – IV: DIGITAL
CINEMATOGRAPHY
(Practical)**

Practical: 60

SECTION-A

Basic objective of understanding through establishing a methodology for lighting design. Understanding of shading techniques and applications. Composition through lighting, camera and color. Creating an on-line "process book" in HTML format that documents the conceptual, technical, and artistic development throughout the semester. Use computer graphics as a medium by developing artistic and technical skills and integrating them.

Introduction, Exposure meters, Tonal Range, Exposure Control, Image Stability, Greater perceived Detail, Repeatability, Portability.

Composition and the rule of thirds, Framing using the rule of thirds, Framing using the sixths, Diagonal framing, Complex and combined composition.

SECTION-B

Understanding of basic terms like Auteur, Diegesis, Editing, Flashback, Flashforward, Focus, Geners, Misc-En-Scene, Story / Plot, Scene / Sequence & Shot.

Lenses and perspective, Frame size and focal length, Perspective, Focal length and emotional involvement, normal' focal length lens.

Aspect ratios, Creating a Look, Deciding what you want, Sharp or Soft, Cold or Warm, Saturation and Desaturation, Skin tone control, The Film Look

SECTION-C

Lighting & Lighting Ratios, Useful Styles, Soft Lighting, Hard Lighting, Colored sources, Defining & visualizing a lighting ratio, Different lighting ratios for film and television.

- Lighting, Psychology of light Human Vision, Light Sources Setting Mood through Lighting, Lighting as a Story Element, Visual Environment Dealing with Natural Lighting Directional Effect of Light, Lighting design process Controlling the Intensity of Light, Color and Color Temperature of Light Three-point lighting, High-Key lighting & Low Key lighting Indoor and Outdoor Lighting Reflectors, Role of reflectors

M.DESIGN (MULTIMEDIA) (SEMESTER – I)

SECTION-D

Color Temperature, Filters and Mired shift values, color temperature meter, Location sources, correcting lamps

Filters, Camera filters, Matching shots, Enhancing filter, fluorescent light correction, polar screens, old filter factors, the pan glass

Technology, Digital Tonal Range, Image Resolution, Required Resolution for HD, Data Quantity, High-Definition, The knowledge base, Editing and post production, formats to shoot, Progressive or interlace, Recording formats, HDV.

HD Cinematography, Lighting and exposing for HD, Setting color balance, Lenses, HD effects other crafts like Art and design, Costume, Makeup and hair, Sound, Script.

The Future-High Definition–HD, Three-chip cameras, Single-chip cameras, Digital presentation.

Books References:

- High Definition Cinematography by Paul Wheeler
- Digital Cinematography by Paul Wheeler
- Practical Cinematography by Paul Wheeler.

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

Scheme of Studies**Working Schedule:**

Total Four Semesters

Two semesters Per Session

19 Weeks Per Semester

30 Hours Per Week

570 Hours Per Semester

Semester – II:					
Subjects	Time allocation	Theory	Practical	Time for Exams	Total Marks
Z brush	150 hrs.	40	60	3 Hrs	100
After effect -I	150 hrs.	40	60	3 Hrs	100
Digital Graphics Production	125 hrs.	40	60	3 Hrs	100
Real flow	125 hrs.	40	60	3 Hrs	100
				Total	400

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

PAPER – I: Z BRUSH

(Theory)

Time: 3 Hrs.**Total Marks: 100****Theory: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Initialize Z Brush, Z Brush Window, Z Brush Canvas, Trays, Palettes, Menus, Saving, Brush Adjustments, Strokes and Alphas, Masking, Subdividing, HD Geometry, Poly paint, 2d, 3d, 2.5d, The Z Script, Timeline, Title Bar, Shelves, Light Window, Status Bar, Buttons, Switches, Sliders, Swatches, Textures, Modifiers, Markers, Preferences, Document settings, 2d and 3d navigations, Render

SECTION-B

Pixel Hybrid Between 2d and 3d, 2.5d 3d tools, 2.5d tools, load, Save, Import, Export Tool, Masking, Deformation, Morph Target, Sub tool, Geometry, UV Paint, GOZ, Stencil, Stroke, Draw and Edit Mode Creating Base Mesh In Z Brush, Z Sphere, Intro, Sketch Brush, Optimize, Binding, Smooth, Straight Lines, Armature Brush, Bulge, Float-Push-Pull, Unified Skin, Adaptive Skin, Mesh Extract, Re topology, Re mesh, Z Sketch, Primitives

SECTION-C

Animation in Z Brush, Movie Palette, Turntable Video, Camera Controls, Layers, Creating, Deleting, Copying Keyframes, Preview Animation, Record a Movie, Render Animation, Export Animation, Movie Palette, Playing Controls Digital Sculpting, Insert Mesh, Micromesh, 3d Brushes, Transpose, Topology, Dyna mesh, Fiber Mesh, Noisemaker, Shadowbox, Projection Master

Texturing, Creating, importing, export textures, Texture Maps, Alpha Palette, Poly Paint, Projection Master, Spotlight, Inventory Palette.

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

SECTION-D

Rendering, BPR, Preview Render, Depth Cue, Depth Cue Alpha, Antialiasing, Fast Render, Environment, Field Of View, HDRI, BPR Filters, Environment Color Patch, Environment Texture Patch, Z Depth, Post Processing Settings, Layer Mask Posing, Mannequins, Transpose or without Transpose, Z Sphere Rigging, Masking Lighting, Adding and adjusting Lights, Global Ambient, Intensity Curve, Global Light Mapping, Modifiers, Shadows, Light Cap, Add Alphas

Books Recommended:

- Getting Started With Z Brush by Pixologic
- Introducing Z Brush by Eric Keller
- Z Brush Digital Sculpting Human Anatomy by Scott Spencer
- Secrets of Z Brush Experts: Tips, Techniques, and Insights for Users of All Abilities by Daryl Wise
- Z Brush Character Creation: Advanced Digital Sculpting, 2nd Edition by Scott Spencer.

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

**PAPER – I: Z
BRUSH
(Practical)**

Practical: 60

SECTION-A

Initialize Z Brush, Z Brush Window, Z Brush Canvas, Trays, Palettes, Menus, Saving, Brush Adjustments, Strokes and Alphas, Masking, Subdividing, HD Geometry, Poly paint, 2d, 3d, 2.5d, The Z Script, Timeline, Title Bar, Shelves, Light Window, Status Bar, Buttons, Switches, Sliders, Swatches, Textures, Modifiers, Markers, Preferences, Document settings, 2d and 3d navigations, Render

SECTION-B

Pixel Hybrid Between 2d and 3d, 2.5d, 3d tools, 2.5d tools, load, Save, Import, Export Tool, Masking, Deformation, Morph Target, Sub tool, Geometry, UV Paint, GOZ, Stencil, Stroke, Draw and Edit Mode, Creating Base Mesh In Z Brush, Z Sphere, Intro, Sketch Brush, Optimize, Binding, Smooth, Straight Lines, Armature Brush, Bulge, Float-Push-Pull, Unified Skin, Adaptive Skin, Mesh Extract, Re topology, Re mesh, Z Sketch, Primitives

SECTION-C

Animation in Z Brush, Movie Palette, Turntable Video, Camera Controls, Layers, Creating, Deleting, Copying Keyframes, Preview Animation, Record a Movie, Render Animation, Export Animation, Movie Palette, Playing Controls Digital Sculpting, Insert Mesh, Micromesh, 3d Brushes, Transpose, Topology, Dyna mesh, Fiber Mesh, Noisemaker, Shadowbox, Projection Master

Texturing, Creating, importing, export textures, Texture Maps, Alpha Palette, Poly Paint, Projection Master, Spotlight, Inventory Palette.

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

SECTION-D

Rendering, BPR, Preview Render, Depth Cue, Depth Cue Alpha, Antialiasing, Fast Render, Environment, Field Of View, HDRI, BPR Filters, Environment Color Patch, Environment Texture Patch, Z Depth, Post Processing Settings, Layer Mask Posing, Mannequins, Transpose or without Transpose, Z Sphere Rigging, Masking Lighting, Adding and adjusting Lights, Global Ambient, Intensity Curve, Global Light Mapping, Modifiers, Shadows, Light Cap, Add Alphas

Books Recommended:

- Getting Started With Z Brush by Pixologic
- Introducing Z Brush by Eric Keller
- Z Brush Digital Sculpting Human Anatomy by Scott Spencer
- Secrets of Z Brush Experts:: Tips, Techniques, and Insights for Users of All Abilities by Daryl Wise
- Z Brush Character Creation: Advanced Digital Sculpting, 2nd Edition by Scott Spencer.

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

PAPER – II: AFTER EFFECTS-I
(Theory)**Time: 3 Hrs.****Total Marks: 100****Theory: 40****Instructions for the Paper Setters:-**

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SECTION-A

Introduction, Workflows, Basic animation using effects and presets, Animating text, Shape layers, animating layers.

Masks, Mask with the Pen tool, Feathering, Replacing the content of the mask, Reflection, Vignette, Adjusting the color.

SECTION-B

Color depth and high dynamic range color, Edit a gradient, Color correction, color grading, color adjustment, Synthetic Aperture Color Finesse, Color models and color spaces, Gamma and tone response

Puppet tools, Deform pins, Areas of overlap, Stiffening an area, Animating pin positions, Recording animation

SECTION-C

Using Roto Brush Tool, Segmentation boundary, Fine-tuning the matte, Freezing your Roto Brush tool results, Changing the background, Animated text, Outputting your project

Plug-ins, Installing and loading plug-ins, Third-party plug-ins included with After Effects, Using Plug-ins, Red Giant Trapcode Suite

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

SECTION-D

Rendering and exporting overview, Supported output formats, Render Queue panel, Render settings, Output modules and output module settings, Encoding and compression options for movies, QuickTime (MOV) encoding and compression settings, Post-render actions, Render with OpenGL

Books Recommended:

- Adobe® Creative Suite 3 After Effects® Scripting Guide & Reference Guide
- The VES Handbook of Visual Effects: Industry Standard VFX Practices and Procedures by Jeffrey A. Okun and Susan Zwerman
- The Visual Effects Arsenal: VFX Solutions for the Independent Filmmaker by Bill Byrne
- The Visual Effects Producer: Understanding the Art and Business of VFX by Charles Finance and Susan Zwerman
- VFX Artistry: A Visual Tour of How the Studios Create Their Magic by Spencer Drate and Judith Salavetz
- The Art and Technique of Matchmoving: Solutions for the VFX Artist by Erica Hornung
- The Green Screen Handbook: Real-World Production Techniques by Jeff Foste.

M.DESIGN (MULTIMEDIA) (SEMESTER – II)**PAPER – II: AFTER
EFFECTS-I
(Practical)****Practical: 60****SECTION-A**

Introduction, Workflows, Basic animation using effects and presets, Animating text, Shape layers, animating layers.

Masks, Mask with the Pen tool, Feathering, Replacing the content of the mask, Reflection, Vignette, Adjusting the color.

SECTION-B

Color depth and high dynamic range color, Edit a gradient, Color correction, color grading, color adjustment, Synthetic Aperture Color Finesse, Color models and color spaces, Gamma and tone response

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SECTION-C

Using Roto Brush Tool, Segmentation boundary, Fine-tuning the matte, Freezing your Roto Brush tool results, Changing the background, Animated text, Outputting your project

Plug-ins, Installing and loading plug-ins, Third-party plug-ins included with After Effects, Using Plug-ins, Red Giant Trapcode Suite

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

SECTION-D

Rendering and exporting overview, Supported output formats, Render Queue panel, Render settings, Output modules and output module settings, Encoding and compression options for movies, QuickTime (MOV) encoding and compression settings, Post-render actions, Render with OpenGL

Books Recommended:

- Adobe® Creative Suite 3 After Effects® Scripting Guide & Reference Guide
- The VES Handbook of Visual Effects: Industry Standard VFX Practices and Procedures by Jeffrey A. Okun and Susan Zwerman
- The Visual Effects Arsenal: VFX Solutions for the Independent Filmmaker by Bill Byrne
- The Visual Effects Producer: Understanding the Art and Business of VFX by Charles Finance and Susan Zwerman
- VFX Artistry: A Visual Tour of How the Studios Create Their Magic by Spencer Drate and Judith Salavetz
- The Art and Technique of Matchmoving: Solutions for the VFX Artist by Erica Hornung
- The Green Screen Handbook: Real-World Production Techniques by Jeff Foster

M.DESIGN (MULTIMEDIA) (SEMESTER – II)**PAPER – III: DIGITAL GRAPHICS
PRODUCTION
(Theory)****Time: 3 Hrs.****Total Marks: 100
Theory: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

Applying concepts of digital graphics, image editing for print and publishing, Creating rich multimedia content for print or TV ads, logos and advertisements.

Introduction and Overview of Photoshop, windows, palettes, features, Masks and Channels, Advance Layer Techniques, Basic Web Images.

SECTION-B

About bitmap images and vector graphics, About paths and the Pen tool ,Importing Smart object, Using paths with artwork, Vector Drawing techniques, Creating a vector graphic from an image, Vector Compositing.

SECTION-C

Color Spaces & Color Modes, The Variations Command, The Auto Commands, Adjusting Levels, Adjust Curves, Non-Destructively, with Adjustment Layers, Advanced Color - correction techniques.

Working with 3D Images, Manipulating 3D objects, Adding 3D objects, Merging 3D layers to share the same 3D space, Positioning objects in a scene, Applying materials to 3D objects, Lighting a 3D scene and Rendering a 3D scene.

SECTION-D

Various Digital imaging Techniques, Morphic Blending, Creative Photo manipulation effects, Motionscape effect, Lomo photography.

Correcting and enhancing Digital photographs, Adding depth of field, Abstract Photoshop artwork, Advanced Typography effects, Creating Image distortion.

Boosting Contrast and color with luminosity, Creating Vignette effect with radial filter, Adding Reflections and shadows to the imagery, 3D raster effects, Stylized Poster making.

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

Books Recommended:-

- Design Essentials for the motion media artist By Angie Taylor.
- Producing For TV and New Media by Catherine Kellison.
- Production for Graphic Design, Fourth edition by Alan pipes.
- The elements of graphic design by Alex White.
- Adobe Photoshop CS5 Classroom in a Book by Adobe Creative Team.
- Layers: The Complete Guide to Photoshop's Most Powerful Feature (2nd Edition) by Matt Kolowsky.
- The Adobe Photoshop CS5 Book for Digital Photographers (Voices That Matter) by Scot Kelby.
- Photoshop Elements 10: The Missing Manual by Barbara Brundage.
- Creative Photoshop CS4: Digital Illustration and Art Techniques by Derek Lea.
- 100% Photoshop: Create stunning artwork without using any photographs by Steve Caplin
- Adobe -Photoshop CS6 Bible by Brad Dayley and DaNae Dayley.
- Adobe Photoshop CS6-Digital Classroom: A complete training package by Jennifer smith.

M.DESIGN (MULTIMEDIA) (SEMESTER – II)**PAPER – III: DIGITAL GRAPHICS
PRODUCTION
(Practical)****Practical: 60****SECTION-A**

Applying concepts of digital graphics, image editing for print and publishing, Creating rich multimedia content for print or TV ads, logos and advertisements.

Introduction and Overview of Photoshop, windows, palettes, features, Masks and Channels, Advance Layer Techniques, Basic Web Images.

SECTION-B

About bitmap images and vector graphics, About paths and the Pen tool, Importing Smart object, Using paths with artwork, Vector Drawing techniques, Creating a vector graphic from an image, Vector Compositing.

SECTION-C

Color Spaces & Color Modes, The Variations Command, The Auto Commands, Adjusting Levels, Adjust Curves, Non-Destructively, with Adjustment Layers, Advanced Color - correction techniques.

Working with 3D Images, Manipulating 3D objects, Adding 3D objects, Merging 3D layers to share the same 3D space, Positioning objects in a scene, Applying materials to 3D objects, Lighting a 3D scene and Rendering a 3D scene.

SECTION-D

Various Digital imaging Techniques, Morphic Blending, Creative Photo manipulation effects, Motionscape effect, Lomo photography.

Correcting and enhancing Digital photographs, Adding depth of field, Abstract Photoshop artwork, Advanced Typography effects, Creating Image distortion.

Boosting Contrast and color with luminosity, Creating Vignette effect with radial filter, Adding Reflections and shadows to the imagery, 3D raster effects, Stylized Poster making.

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

Books Recommended:-

- Design Essentials for the motion media artist By Angie Taylor.
- Producing For TV and New Media by Catherine Kellison.
- Production for Graphic Design, Fourth edition by Alan pipes.
- The elements of graphic design by Alex White.
- Adobe Photoshop CS5 Classroom in a Book by Adobe Creative Team.
- Layers: The Complete Guide to Photoshop's Most Powerful Feature (2nd Edition) by Matt Kolowsky.
- The Adobe Photoshop CS5 Book for Digital Photographers (Voices That Matter) by Scot Kelby.
- Photoshop Elements 10: The Missing Manual by Barbara Brundage.
- Creative Photoshop CS4: Digital Illustration and Art Techniques by Derek Lea.
- 100% Photoshop: Create stunning artwork without using any photographs by Steve Caplin
- Adobe -Photoshop CS6 Bible by Brad Dayley and DaNae Dayley.
- Adobe Photoshop CS6-Digital Classroom: A complete training package by Jennifer smith.

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

PAPER –IV: REAL FLOW
(Theory)**Time: 3 Hrs.****Total Marks: 100****Theory: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION-A

GUI and Layouts, Node Types,
Export Central, Dynamics Considerations,
Simulation Workflow, Python Scripting
Pedestrian Tunnel Flood Project,

SECTION-B

Project Directories, Importing Geometry,
Kill Daemons, Emitter Particle Parameters,
Object-Particle Interaction Parameters,
Key frames and Curve Editor, Performance Considerations

SECTION-C

Adding Details, Rigid Body Dynamics,
Wet Maps
High Resolution Simulation and Extra Elements,
Monitoring Simulations, Secondary Splash Elements

SECTION-D

Meshing it All, Setting Up a Mesh, Meshing Parameters,
Optimizing a Mesh, Meshing Performance
Importing Assets and Rendering,
Importing and Exporting SD Files, Importing Meshes,
Rendering Meshes, Rendering Particles, Rendering Wet maps,
Rendering Mesh Attributes

Book Recommended:

- Software manuals of Real flow.

M.DESIGN (MULTIMEDIA) (SEMESTER – II)

**PAPER –IV: REAL FLOW
(Practical)****Practical: 60****SECTION-A**

GUI and Layouts, Node Types,
Export Central, Dynamics Considerations,
Simulation Workflow, Python Scripting
Pedestrian Tunnel Flood Project,

SECTION-B

Project Directories, Importing Geometry,
Kill Daemons, Emitter Particle Parameters,
Object-Particle Interaction Parameters,
Key frames and Curve Editor, Performance Considerations

SECTION-C

Adding Details, Rigid Body Dynamics,
Wet Maps
High Resolution Simulation and Extra Elements,
Monitoring Simulations, Secondary Splash Elements

SECTION-D

Meshing it All, Setting Up a Mesh, Meshing Parameters,
Optimizing a Mesh, Meshing Performance
Importing Assets and Rendering,
Importing and Exporting SD Files, Importing Meshes,
Rendering Meshes, Rendering Particles, Rendering Wet maps,
Rendering Mesh Attributes

Book Recommended:

- Software manuals of Real flow.

M.DESIGN (MULTIMEDIA) (SEMESTER – III)

Subjects	Time Allocation	Theory	Practical	Time for Exams	Total Marks
Vue Infinite	150 hrs.	40	60	3 Hrs	100
After Effects -II	150 hrs.	40	60	3 Hrs	100
Cinema 4D	125 hrs.	40	60	3 Hrs	100
Digital Sound Production with Adobe Sound-booth	125 hrs.	40	60	3 Hrs	100
				Total:	400

For all theory papers same pattern should be followed.

M.DESIGN (MULTIMEDIA) (SEMESTER – III)

PAPER –I: VUE INFINITE**Time: 3 Hrs.****Total Marks: 100****Theory: 40****Practical: 60****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section A

Terrains
Vegetation
Eco System Generation III

Section B

Atmospheres
Natural Elements
Lighting
Rendering

Section C

Compositing
Animation
Materials

Section D

Interface & Workflow
Import & Export

Books Recommended:

- Vue 7: From the Ground Up: The Official Guide by Ami Chopine and Vladimir Chopine
- Vue 7: Beyond the Basics by Richard Schrand
- E-on Software's Vue 6 Revealed by Richard Schrand

M.DESIGN (MULTIMEDIA) (SEMESTER – III)

PAPER – II: AFTER EFFECTS-II**Time: 3 Hrs.****Total Marks: 100****Theory: 40****Practical: 60****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section A

Compositing overview, online resources for compositing, Compositing fire, explosions, muzzle flashes, Compositing fog, smoke, and clouds

Advanced Editing Techniques, Warp Stabilizer VFX, Single-point motion tracking, Multipoint tracking, Particle simulation, Retiming playback using the time warp effect.

Section B

Layer markers and composition markers, Composition markers, Layer markers, Web links, chapter links, cue points, and markers, Scripts and utilities for working with markers

Using 3D Features, 3D Text, 3D Views, 3D Lights, Camera, Repositioning layers, Working with Cinema 4D

About the 3D Camera Tracker effect, tracking the footage, Ground plane, a camera, and the initial text

Section C

Creating realistic shadows, Ambient light, Additional text elements, locking a layer to a plane with a null object, animating the text, Camera's depth of field, Rendering the composition.

Scripts, Loading and running scripts, Scripts included with After Effects, Writing and modifying scripts, Automation

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Section D

Expressions Basic, About expressions, Add, edit, and remove expressions, Use the expression language reference to write an expression, The expression language, Expression errors & examples

Books Recommended:

- Adobe® Creative Suite 3 After Effects® Scripting Guide& Reference Guide
- The VES Handbook of Visual Effects: Industry Standard VFX Practices and Procedures by Jeffrey A. Okun and Susan Zwerman
- The Visual Effects Arsenal: VFX Solutions for the Independent Filmmaker by Bill Byrne
- The Visual Effects Producer: Understanding the Art and Business of VFX by Charles Finance and Susan Zwerman
- VFX Artistry: A Visual Tour of How the Studios Create Their Magic by Spencer Drate and Judith Salavetz
- The Art and Technique of Matchmoving: Solutions for the VFX Artist by Erica Hornung
- The Green Screen Handbook: Real-World Production Techniques by Jeff Foster

M.DESIGN (MULTIMEDIA) (SEMESTER – III)

PAPER – III: CINEMA 4D**Time: 3 Hrs.****Total Marks: 100****Theory: 40****Practical: 60****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section A

Introduction, 3d space, Main menus , Command palettes, Arranging objects viewports, Render options, Objects and Attribute manager, Material manager. Material and shaders.

Section B

Lighting and Rendering, Multi pass rendering in cinema 4d, sky is limit, Global illumination, IES Lights, Body paint 3d, direct painting on UVW meshes.

Advance Render, Global illumination, HDRI, Caustics, Ambient Occlusion and sky simulation.

Section C

Pyro cluster, Animation, The Timeline, F-Curve, Non-linear animation, Audio support, particles, Walk cycle with c motion, pose morph.

Section D

Dynamics Effects, Rigid body dynamics, soft body dynamics, Aerodynamics forces. MOCCA, Inverse kinematics, Forward kinematics, Visual Selector, Poser mixer, Morph tool ,Sketch and toon ,Integration ,3d formats, 2d image and animation formats, compositing formats, 2d vector Formats.

Books Recommended:

- Cinema 4D Beginner's Guide by Jen Rizzo
- Light Shadow Space: Architectural Rendering with Cinema 4D by Horst Sondermann
- Cinema 4D 10 Handbook by Anson Call
- Exploring 3D Modeling with Cinema 4D R9 by Tony Alley
- Cinema 4D R11: inklusive Module und BodyPaint 3D by Maik Eckhardt

M.DESIGN (MULTIMEDIA) (SEMESTER – III)

PAPER – IV: DIGITAL SOUND PRODUCTION WITH ADOBE SOUNDBOOTH**Time: 3 Hrs.****Total Marks: 100****Theory: 40****Practical: 60****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section A

Introduction, Elements of electronics, Digital Audio Fundamentals, Sound spectrum and frequencies, History of recording and formats.

Sound recording in Radio Stations, Sound in Studio formats, Various Recording Software in the industry, Digital technology and advancements.

Section B

Interface, Customizing, Dock, group and float panels, Working with multiple monitors and managing workspace, Predefined Workspaces, Customize.

Importing, recording and playing audio, hardware inputs and outputs, Opening ,creating and recording files, Playing audio.

Section C

Editing and repairing audio files, Displaying audio, Selecting audio, Copying, Pasting cropping and deleting audio, Fading, Changing and maximizing volume, Repairing audio, Looping, Stretching ,and pitch shifting.

Use effect presets, Effects reference, Standard and Advanced effects ,Analog Delay effect, Chorus/ flanger effect, Compressor effect, Convolution Reverb effect, Distortion and dynamics effect ,EQ:Graphic, EQ:Parametric effect, Mastering effect, Phaser effect, Vocal enhancer effect.

M.DESIGN (MULTIMEDIA) (SEMESTER – III)

Section D

Multitrack mixing and editing, Creating multitrack files, tracks and clips, Mixing and editing, Customizing scores, Saving and mixing down multitrack files.

Saving and Closing files, file formats, Standard audio formats, Video and AAC formats

Books Recommended:

- Sound and Recording sixth edition by Francis Rumsey and Tim McCormick.
- Sound Engineering Explained second edition by Michael Talbot -Smith
- Sound for film and Television third edition by Tomlinson Holman.
- Master Handbook of Audio Production by Jerry C. Whitaker.
- Producing Great Sound for Film and Video third edition by Jay Rose.
- Sound and Music for the theatre by Deena Kaye and James Lebrecht.
- Audio Production and Post- Production by Woody wood hall.
- The Art of Recording by William Moylan

M.DESIGN (MULTIMEDIA) (SEMESTER – IV)

Subjects	Time Allocation	Theory	Practical	Time for Exams	Total Marks
Compositing	150 hrs.	40	60	3 Hrs	100
Editing	150 hrs.	40	60	3 Hrs	100
Animation	125 hrs.	40	60	3 Hrs	100
Major Project with Documentation	125 hrs.	-	100	3 Hrs	100
				Total:	400

For all theory papers same pattern should be followed.

M.DESIGN (MULTIMEDIA) (SEMESTER–IV)

**PAPER–I: COMPOSITING
(Theory)****Time: 3 Hrs.****Total Marks: 100
Theory: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section A

- Rules and Fundamentals of compositing:
- VFX Concepts
- Layer based and Node based Compositing Software's

Section B

- 2D and 3D Compositions
- Track Mattes and their functions

Section C

- Rotoscoping and Blending Modes
- 3D features and Ray traced rendered Compositions

Section D

- Behaviors
- Turning 2d Image to 3D image

Books Recommended:

- Adobe After Effects CS6 Visual Effects and Compositing Studio Techniques By Mark Christiansen
- The Filmmaker's Guide to Visual Effects: The Art and Techniques of VFX for Directors, Producers, Editors and Cinematographers By Eran Dinur
- Compositing Visual Effects in After Effects: Essential Techniques By Lee Lanier

M.DESIGN (MULTIMEDIA) (SEMESTER – IV)

**PAPER – I: COMPOSITING
(Practical)****Practical: 60**

- Rules and Fundamentals of compositing:
- VFX Concepts
- Layer based and Node based Compositing Software's
- 2D and 3D Compositions
- Track Mattes and their functions
- Rotoscoping and Blending Modes
- 3D features and Ray traced rendered Compositions
- Behaviors
- Turning 2d Image to 3D image

Books Recommended:

- Adobe After Effects CS6 Visual Effects and Compositing Studio Techniques By Mark Christiansen
- The Filmmaker's Guide to Visual Effects: The Art and Techniques of VFX for Directors, Producers, Editors and Cinematographers By Eran Dinur
- Compositing Visual Effects in After Effects: Essential Techniques By Lee Lanier

M.DESIGN (MULTIMEDIA) (SEMESTER–IV)

**PAPER– II: EDITING
(Theory)****Time: 3 Hrs.****Total Marks: 100
Theory: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section A

- Introduction to Editing Workflow
- Configuring Non Linear Editor
- Setting Up project and Importing Media

Section B

- Three Point and Four Point Editing
- Working with various Panels
- Working with effects and Transitions

Section C

- Working with Titles
- Advanced Color Correction

Section D

- Green/Blue Screen Keying
- Exporting

Books Recommended:

- Adobe Premiere Pro 2.0: Studio Techniques by Jacob Rosenberg
- Premiere Pro Editing Workshop by Marcus Geduld
- Film and Video Editing By Roger Crittenden
- Digital Video Editing Fundamentals by Wallace Jackson

M.DESIGN (MULTIMEDIA) (SEMESTER–IV)

**PAPER – II: EDITING
(Practical)****Practical: 60**

- Introduction to Editing Workflow
- Configuring Non Linear Editor
- Setting Up project and Importing Media
- Three Point and Four Point Editing
- Working with various Panels
- Working with effects and Transitions
- Working with Titles
- Advanced Color Correction
- Green/Blue Screen Keying
- Exporting

Books Recommended:

- Adobe Premiere Pro 2.0: Studio Techniques by Jacob Rosenberg
- Premiere Pro Editing Workshop by Marcus Geduld
- Film and Video Editing By Roger Crittenden
- Digital Video Editing Fundamentals by Wallace Jackson

M.DESIGN (MULTIMEDIA) (SEMESTER–IV)

**PAPER–III: ANIMATION
(Theory)****Time: 3 Hrs.****Total Marks: 100
Theory: 40****Instructions for the Paper Setters:-**

Eight questions of equal marks (Specified in the syllabus) are to be set, two in each of the four Sections (A-D). Questions may be subdivided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

Section A

- Introduction to Animation Principles
- 2d and 3D animation concepts

Section B

- Auto and Set key variation, Set drive and Set driven key
- Introduction to Skeletal System

Section C

- Joint tool, Reroot Joint, Insert Joint, mirror Joint, Ovent Joint, IK Handles, IK Spline handle tool, FK and IK Blend, Control Curves Concept

Section D

- A rig of a Human Body
- Animation Editors- Dope sheet and Graph Editor

Books Recommended:

- Character Animation in 3D: Use Traditional Drawing Techniques to Produce Stunning CGI Animation by Steve Roberts
- Cartoon Character Animation with Maya: Mastering the Art of Exaggerated Animation by Keith Osborn
- Maya Character Creation: Modeling and Animation Controls by Chris Maraffi

M.DESIGN (MULTIMEDIA) (SEMESTER – IV)

**PAPER – III: ANIMATION
(Practical)****Practical: 60**

- Introduction to Animation Principles
- 2d and 3D animation concepts
- Auto and Set key variation, Set drive and Set driven key
- Introduction to Skeletal System
- Joint tool, Reroot Joint, Insert Joint, mirror Joint, Ovent Joint, IK Handles, IK Spline handle tool, FK and IK Blend, Control Curves Concept
- A rig of a Human Body
- Animation Editors- Dope sheet and Graph Editor

Books Recommended:

- Character Animation in 3D: Use Traditional Drawing Techniques to Produce Stunning CGI Animation by Steve Roberts
- Cartoon Character Animation with Maya: Mastering the Art of Exaggerated Animation by Keith Osborn
- Maya Character Creation: Modeling and Animation Controls by Chris Maraffi

M.DESIGN (MULTIMEDIA) (SEMESTER – IV)

PAPER – IV: MAJOR PROJECT WITH DOCUMENTATION

Total Marks: 100

Practical: 100

Project can be made using any of the above software.

Documentation includes work flow, tools used and project details and chapters like dissertation.