ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

Programme: B.Sc. Honours in Multimedia (Major)

w.e.f. AY 2023-24

COURSE STRUCTURE

Year	Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
I	I	1	History of Film Industry	3+2	4
		2	Story Design & Execution	3+2	4
	II	3	Graphic Design	3	3
			Graphic Design Lab	2	1
		4	Color key Artist	3	3
			Color key Artist Lab	2	1
II	III	5	Introduction to 3D	3	3
			Introduction to 3D Lab	2	1
		6	Advanced Graphic Design	3	3
			Advanced Graphic Design Lab	2	1
		7	Basics of Animation	3	3
			Basics of Animation Lab	2	1
		8	2D Animation	3	3
			2D Animation Lab	2	1
	IV	9	Fundamentals of Filmmaking	3	3
			Fundamentals of Filmmaking Lab	2	1
		10	Nuendo	3	3
			Nuendo Lab	2	1
		11	Science of Sound	3	3
			Science of Sound Lab	2	1
III	V	12	Story Board Design	3	3
			Story Board Design Lab	2	1
		13	Character Animation	3	3
			Character Animation Lab	2	1
		14	Introduction to Photography (OR) AV Production	3	3
			Introduction to Photography (OR) AV Production Lab	2	1
		15	AV Content Creation (OR) 3D Animation	3	3
			AV Content Creation (OR) 3D Animation Lab	2	1
	VI		Semester Internship/Apprenticeship with 12 Credits		

Year	Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
IV	VII	16	Advanced Character Animation (OR) 3D Live Integration	3	3
			Advanced Character Animation (OR) 3D Live Integration Lab	2	1
		17	Facial Expressions & Blend Modes (OR) Sfx & Dynamics	3	3
			Facial Expressions & Blend Modes (OR) Sfx & Dynamics Lab	2	1
		18	Lighting for Animation (OR) Rendering + Rendering	3	3
			Lighting for Animation (OR) Rendering Lab	2	1
		SEC			
		19	Drawing & Digital Art (OR) Advanced Graphics Design	3	3
			Drawing & Digital Art (OR) Advanced Graphics Design Lab	2	1
		20	Digital Matte Painting (OR) 3D Short Film Making	3	3
			Digital Matte Painting (OR) 3D Short Film Making Lab	2	1
	VIII	21	Video Editing (OR) Film Color Grading	3	3
			Video Editing (OR) Film Color Grading Lab	2	1
		22	Audio Editing (OR) Visual Effects	3	3
			Audio Editing (OR) Visual Effects Lab	2	1
		23	Motion Graphics (OR) Camera Tracking	3	3
			Motion Graphics (OR) Camera Tracking Lab	2	1
		SEC			
		24	Cinematography (OR) Advanced Compositing	3	3
			Cinematography (OR) Advanced Compositing Lab	2	1
		25	Green screen shooting (OR) Matchmoving Techniques	3	3
			Green screen shooting (OR) Matchmoving Techniques Lab	2	1

COURSE1: HISTORY OF FILM INDUSTRY

Theory   Credits: 3   3 hrs/week

I.   Course Objectives:

- Explain the historical development of visual effects and identify key milestones in the field.
- Apply foundational concepts and techniques in visual effects production, such as compositing, motion tracking, and 3D modeling.
- Analyze and critique visual effects in films, commercials, and other media, considering their technical execution and artistic integration.
- Collaborate with team members in the planning and execution of visual effects projects, demonstrating effective communication and teamwork skills.

II.   Learning Outcomes

Students at the successful completion of the course will be able to:

- Understand the history and evolution of visual effects in the film and entertainment industry.
- Gain knowledge of the fundamental principles and techniques used in visual effects.
- Develop skills in creating and manipulating visual effects using industry-standard software and tools.
- Collaborate effectively as part of a team in the creation of visual effects projects.

III.   Syllabus:

Unit - I: Introduction to Visual Effects, History and evolution of visual effects in film and entertainment, Overview of different types of visual effects and their applications, Introduction to industry-standard software and tools used in visual effects production, Principles of compositing and image manipulation, Basics of 3D modeling and animation

Unit - II: Hollywood Golden Age, Studio system and the rise of Hollywood, Major Hollywood studios and their influence, Introduction to classic films and iconic stars, German Expressionism and its impact on filmmaking, French New Wave and its influence on global cinema, Italian Neorealism and its contribution to film aesthetics

Unit - III: New Hollywood era and the shift in filmmaking trends, Independent filmmaking and the rise of auteur directors, Notable films and directors of the New Hollywood era, Bollywood and the Indian film industry, Hong Kong cinema and martial arts films

Unit - IV: Evolution of filmmaking techniques and technology, Impact of digital filmmaking on production and distribution, Contemporary film genres and trends, History of film censorship and its implications, Films as cultural artifacts and agents of social change, Controversial films and their impact on society

Unit - V: Propaganda films and their role in shaping public opinion, Films depicting historical events and political movements, Film industry and political activism, Approaches to film analysis and interpretation, Film theory and its application in understanding cinema, Writing film reviews and critical analysis

References:

1. "The Story of Film" by Mark Cousins

2. "Film History: An Introduction" by Kristin Thompson and David Bordwell

3. "The Oxford History of World Cinema" edited by Geoffrey Nowell-Smith

4. "American Film: A History" by Jon Lewis

   Web resources suggested by the Teacher concerned and the college Librarian including reading material

IV.   a) Co-Curricular Activities:

- Film Screenings and Discussions
- Film History Research Projects
- Film Exhibitions or Museum Visits
- Film-related Field Trips
- RVJ(Reflective Visual Journal)

b) Suggested Co-Curricular Activities:

•Mentorship and Peer Support
•Collaborate on Research or Creative Projects
•Participate in Design Competitions
•Start a Personal Blog or Podcast

V.   List of Experiments:

1. Biographical Research Project

2. Comparative Film Analysis

3. Film Archiving and Restoration

4. Film Exhibition Planning

5. Oral History Interview

COURSE 2: STORY DESIGN & EXECUTION

Theory   Credits: 3   3 hrs/week

I.   Course Objectives:

- Demonstrate a thorough understanding of the fundamental elements of storytelling
- Develop multidimensional and relatable characters with compelling motivations.
- Control pacing and maintain narrative flow throughout the story
- Develop a marketing plan to promote

II.   Learning Outcomes

Students at the successful completion of the course will be able to:

- Create well-structured narratives with clear plot progression and character development.
- Craft engaging dialogue that reveals character traits and advances the story
- Build conflict, tension, and suspense to captivate readers or viewers
- Pitch their stories effectively, create compelling synopses, and identify target audiences

III.   Syllabus:

Unit - I: Introduction to Story Design and Execution, Understanding the fundamentals of storytelling, Elements of a compelling story, Different types of narratives and genres, The importance of theme and central conflict, Developing strong characters

Unit - II: Story Structure, The three-act structure, Plot development and progression, Introduction to story beats, Understanding story arcs and character arcs, Subplots and their role in storytelling, Creating a vivid and immersive world, Establishing the rules and logic of the story world, Developing the physical and cultural aspects of the setting

Unit - III: Writing natural and realistic dialogue, using dialogue to reveal character traits and motivations, Establishing tone and subtext through dialogue, Balancing dialogue with narrative description, Understanding the different types of conflict, Creating obstacles and challenges for the protagonist

Unit - IV: Developing multidimensional characters, Character back stories and motivations, Relationships and interactions between characters, Character growth and transformation throughout the story, Incorporating plot twists to surprise and engage the reader, balancing unpredictability with believability

Unit - V: Adapting stories for different mediums (e.g., film, television, video games), Understanding the unique requirements of each medium, Collaborating with other creative in the adaptation process, Exploring the potential of interactive storytelling, Crafting an effective story pitch, Understanding target audiences and marketability, developing a marketing plan for your story

IV. References:

1.   "Story: Substance, Structure, Style, and the Principles of Screenwriting" by Robert McKee

2.   "The Anatomy of Story: 22 Steps to Becoming a Master Storyteller" by John Truby

3.   "The Art of Dramatic Writing: Its Basis in the Creative Interpretation of Human Motives" by Lajos Egri

4.   "The Hero with a Thousand Faces" by Joseph Campbell

   Web resources suggested by the Teacher concerned and the college Librarian including reading material

V.   a) Co-Curricular Activities:

- Storytelling Workshops
- Scriptwriting Competitions
- Story Analysis Sessions
- Film Screenings and Analysis
- RVJ(Reflective Visual Journal)

b) Suggested Co-Curricular Activities:

   •Character Profile
   •Collaborate on Research or Creative Projects
   • Story Pitching and Presentation Sessions
   •Start a Personal Blog or Podcast

COURSE 3: GRAPHIC DESIGN

Theory	Credits: 3	3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

    1. Understanding Design Principles
    2. Proficiency in Design Software
    3. Conceptualization and Ideation
    4. Digital Imaging and Photo Editing
    5. Presentation and Professional Skills

2. Syllabus:

UNIT – I

Introduction to Graphic Design: Introduction to Multimedia , key elements of multimedia, applications of multimedia, hardware and software requirements of multimedia, introductiontoGraphic Design, what is Raster Graphic & Vector Graphic, Uses & Difference between Raster Graphic & Vector Graphics

UNIT – II

Photoshop: Getting started with Photoshop, page layout and back ground, Photoshop programwindow-title bar, menu bar, options bar, image window, image title bar, Status bar,ruler, palettes, tool box, screen modes, saving files, reverting files, closing files.

UNIT – III

Working with images - image size and resolution, image editing, colour modes &adjustments, back grounds.

UNIT – IV

Making selections –lasso tools, sections tools, polygon lasso tool, magnetic lasso tool, magic hand tool, grow and similar commands, moving a portion of image, editing selections, fillinga selection, transforming selection, painting, drawing and retouching tools.

UNIT – V

Layers and Filters : layers, type tool, converting layers, image masking, filters – the filter menu, artistic filter, blur filter, brush store filters, distort filters, noise filters, pixelate filter, lighting effects, difference clouds, sharpen filters, printing. Web based Photoshop: Web template designing, buttons, tittles, back grounds, etc.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. Layout and Composition
2. Visual Communication
3. think creatively, and come up with innovative solutions
4. work on projects and assignments that will enable you to build a strong portfolio

COURSE 3: GRAPHIC DESIGN

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

Commercial Work: Photo base multi color visiting card – Multi color wedding cards
– Paperadds (Photo base) Pomp lets (Photo base) Broachers (Photo base) –
Advertisementdesigning
– Pomp lets (Photo base) – Broachers (Photo base).

Digital Work: Pass port designing, Maxi Modeling, Digital Modeling - Black and
White PhotoColor conversation, Marriage album designing.

Flex Modeling: Front light board designing, back light board designing.

5. References:

1. "Graphic Design School: The Principles and Practice of Graphic Design" by David Dabner, Sandra Stewart, and Eric Zempol
2. "How to be a Graphic Designer without Losing Your Soul" by Adrian Shaughnessy
3. "Graphic Design: The New Basics" by Ellen Lupton and Jennifer Cole Phillips

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.
2. Workshops and Demonstrations
3. Design Competitions
4. Inviting guest speakers from the graphic design industry can expose students to real-world experiences and insights
5. Design Workshops and Projects

COURSE 4: COLOR KEY ARTIST

Theory	Credits: 3	3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:
    1. understanding of the principles and concepts of color theory
    2. understand how to create visually pleasing compositions using these schemes
    3. will gain practical knowledge of color mixing techniques using various media, such as paints, pastels,colored pencils, or digital tools
    4. understand how color is used differently in each discipline and develop skills specific to their chosenfield

2. Syllabus:

UNIT – I
Composition, Sketching, Texture, material, Light, shadow and, highlights, Drawing pencils,Colorpencils, Glasses, books, vases, flowers, plants, and rocks.

UNIT – II
Composition, Sketching, Texture, material, Light, shadow and, highlights, Drawing pencils,Colorpencils, Glasses, books, vases, flowers, plants, and rocks.

UNIT – III
Composition, Sketching, Texture, material, Light, shadow and, highlights, Drawing pencils,Colorpencils, Glasses, books, vases, flowers, plants, and rocks.

UNIT – IV
Sketching, Shading, Draw the shape of natural objects like trees, flowers, Composition and perspective, Outdoor study, nature study, architectural study, Working with pencil, water color,charcoal, oil pastels and acrylic paints.

UNIT – V
Drawing and composition, Drawing from imagination, Illustration based on imaginary concepts, Experimenting with dot, lines, shapes, forms, contour, texture, size perspective, Working with pencil, water color, charcoal, oil pastels and Acrylic paints

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. Understanding of Color Theory
2. Mastery of Digital Tools
3. Visual Communication Skills
4. Attention to Detail and Accuracy
5. Portfolio Development

COURSE 4: COLOR KEY ARTIST

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Drawing pencils
- Color pencils
- Glasses, books, vases, flowers, plants, and rocks.
- Sketching
- Shading
- Draw the shape of natural objects like trees, flowers.
- Composition and perspective
- Outdoor study, nature study, architectural study
- Working with pencil, water color, charcoal, oil pastels and acrylic paints.
- Drawing and composition
- Drawing from imagination
- Illustration based on imaginary concepts
- Experimenting with dot, lines, shapes, forms, contour, texture, size perspective
- Working with pencil, water color, charcoal, oil pastels and Acrylic paints

5. References:

1. "Interaction of Color" by Josef Albers
2. "Color and Light: A Guide for the Realist Painter" by James Gurney
3. "The Elements of Color: A Treatise on the Color System of Johannes Itten" by Johannes Itten

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.
2. Workshops and Demonstrations
3. Exhibitions and Showcases
4. Collaborative Projects
5. Art Competitions

COURSE 5: INTRODUCTON TO 3D

Theory	Credits: 3	3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

   Use these tools to build complex objects then learn the basic 3D rendering tools and

   techniquesincluding camera settings. Expose to all relevant aspects of CG creating with 3D

   Software.

2. **Syllabus:**

UNIT I

Introduction to the interface of Maya, Menu set, Main Menu Bar, Panel Menu, The Channel Box and Layer Editor, Shelf, Hotkeys, Viewport, Attribute Editor, Hot Box, Setting and Preferences, New, Set Project, About Polygons, Creating Polygon primitives, Cameras, Edit Selections: Selection, Move, Scale, Rotate, Lasso tools - Creating New Shelf, Duplicating objects, Pivot points, Snapping, Outline.

UNIT II

NURBS, CV, EP, Bezier, Pencil Curve tools. Props Modeling - Modeling a high poly model, Mesh Conversion: Polygon to Nurbs, Nurbs to polygon, Highpoly, Low Poly, viewport references, Model using Reference images, basic posture, Difference between hi- poly & low-poly characters.

UNIT III

Introduction to basic material types & Procedurals. Study of concepts: Opacity, Transparency, Specularity and color, Working with Transparency, Reflection & Refraction, Bump & Displacement Maps. Introduction to unwrapping, Unwrapping the maps for various 3d characters. Working with 2D
Textures and 3D, Texture, Introduction to the mapping and Normal Maps, Shadow maps, Raytraced shadows.

UNIT IV

Lighting, Working with Maya Lights 1-Point, Direct, Spot, Working with Maya Lights 2-Ambient, Area and Volume, Direct Illumination-Creating and Illuminating a Stage Show, Three Point Lighting and Exterior Lighting, Cast shadows, decay rate, Previewing lighting and shadows creating depth map Shadow, creating ray-traced

UNIT V

Concept of a lighting system and shadows, Creating area light shadows, setting area light visibility, Creating soft shadows with spotlights, Indirect lighting: Setting illumination for interiors, Tuning global illumination, rendering an AVI, Rendering an image sequence. Render layers: introduction, creating, Applying to render layer presets, setting overrides, creating render layer composites, Render Passes: Introduction, compare render passes and render layers, Render quality: anti-aliasing, setting color profiles, diagnosing ray tracing, adjust motion blur.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

- ▯ Understand the virtual 3D space and how to build objects
- ▯ Create objects using primitive shapes and sub patch
- ▯ geometry
    Analyze the importance of file backup and management(projects setup)
Evaluate the projects and assignments developed/prepared by the students

COURSE 5: INTRODUCTON TO 3D

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

1. Create any Model some objects such as chairs, tables, fruits, utensils

2. Create any Model instruments, tools

3. Create any Model of Cars or Bike,

4. Create any model of the male or female character.

5. Create any Model of any animal.

6. Create any Model of any birds, fishes, and worms.

7. Apply basic material and shader types & Procedurals textures.

8. Unwrap the models of objects and characters using various projection maps.

9. Apply texture on various objects and characters.

10. Create a natural outdoor or indoor scene.

5. References:

1. Digital Modeling Book by William Vaughan
2. Advanced Maya Texturing and Lighting Book by Lee Lanier

6. Co-Curricular Activities:

- Presentation on Modeling, Texturing Rendering, and popular workflow
- Demonstrate or Exhibit(museum) developed projects
- Group discussion on 2D, 2.5D & 3D
- Study tour or Visit to production house to get knowledge on the 3D pipeline
- Exhibit on the external and internal models with a team project

COURSE 6: ADVANCED GRAPHIC DESIGN

Theory	Credits: 3	3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

1. Print and digital design expertise
2. Branding and identity design
3. Professional portfolio development
4. Collaboration and client communication
5. Ethical and legal considerations

2. Syllabus:

UNIT I
Introduction of Graphics design – About Photoshop , Getting Started with Photoshop, Workingwith Basic selection ,Working with Images , Layer concepts , Colour correction –Photo retouching

UNIT II
Painting in Photoshop, Working with the pen tool, Mask effect, Effective Title making, Creatingspecial effects – Creating Web templates, Exporting your work to various formats. Using HDR toning for images, variations, filters and gallery.

UNIT III
Introduction of Illustrator, Interface of illustrator, Dynamic Design Tools, Digital Designingworks, Front, page design, Making Clipart, Tracing techniques, Business cards , Banners andposters. Using shapes and lines to complete digital works.

UNIT IV
Vector Art Design principles, Logo/Flier Design, Working with Text, Colour and Graphics andLayout, Handling Page Elements, Multiple Pages, Typography for any digital work like brochures, Pamplets etc…

UNIT V
Image compositing , print ads making , Magazine , Adjusting Print Settings, color grading forprinting work andvector for digital printing, Title creation for various designs.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. Advanced Image Editing and Manipulation
2. Collaboration and Communication
3. Mastery of Design Principles
4. Will gain knowledge of current trends and best practices in the graphic design industry

COURSE 6: ADVANCED GRAPHIC DESIGN

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Advanced blending modes
- Smart Objects and Smart Filters
- Advanced retouching and healing techniques
- Advanced photo compositing techniques
- Creating realistic photo effects
- Manipulating lighting and shadows
- Color correction and grading techniques
- Advanced typography techniques
- Creating custom type treatments
- Text effects and layer styles
- Designing posters and promotional materials
- Creating branding and identity systems
- Designing magazine spreads and editorial layouts

5. References:

4. Philip B. Meggs, Alston W. Purvis, Meggs' "History of Graphic Design", 5th Edition November2011.

5. Kelly McCathran and video2brain, "Adobe Photoshop CS6: Learn by Video": Core TraininginANIMATION by (Jun 18, 2012)

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Design Competitions
3. Field Trips and Studio Visits

4. Design Exhibitions or Showcases

5. Invited Lectures and Presentations on related topics by field experts/industrial experts.

COURSE 7: BASICS OF ANMATION

Theory   Credits: 3   3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

1. Understanding Animation Principles

2. Familiarity with Animation Techniques

3. Proficiency in Animation Software

4. Creation of Basic Animations

5. Building their portfolio and pursue further studies or a career in animation

2. Syllabus:

UNIT – I
History of animation, Science of animation, technology of animation, psychology of animation,

UNIT – II
Principles of animation, Animation theory, squash and stretch, anticipation, Staging, straightahead and pose to pose, follow through and overlapping action, slow-in and slow-out, arcs, secondary action, timing, execration, solid drawing and appeal.

UNIT – III
Types of animation, Traditional animation, 2D vector based animation, 3D computeranimation, Motiongraphics, Stop motion animation

UNIT – IV
Working with animation workflow, story creation, scripting, scene preparation, locations and characters, props and sets, lighting and sound design for animation

UNIT – V
Using camera for animation, understanding camera structure and lenses, lighting foranimation, layout design,working on resolution, frame rate, aperture, focal length,

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. Character Design and Animation

2. Storytelling and Narrative Skills

3. Time Management and Organization

4. Knowledge of Animation Software

COURSE 7: BASICS OF ANMATION

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Principles of animation
- Working on camera
- Working on lights
- Working with sound
- Making stop motion animation

5. References:

1. "The Animator's Survival Kit" by Richard Williams
2. "Character Animation Crash Course!" by Eric Goldberg
3. "Cartoon Animation" by Preston Blair
4. "Timing for Animation" by Harold Whitaker and John Halas

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.
2. Organize animation contests or challenges where students can showcase their skills and creativity
3. teamwork, collaboration, and communication skills
4. Organize visits to animation studios, exhibitions, or industry events
5. Invited Lectures and Presentations on related topics by field experts/industrial experts.

COURSE 8: 2D ANIMATION

Theory	Credits: 3	3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

Knowledge and utilize components to create interactivity and manipulate animation using several animation tools and techniques in this course.

2. Syllabus:

UNIT I

What is Animation - Early examples of Animation - Stop Motion Photo Animation - Zoetrope – Thaumatrope – Cell and Paper Animation - Types of Animation - Facial expressions - Flash Overview – About Adobe Animate Interface - Menu Bar, Tools – Layers-Property Inspector – Timeline – Stage - Scene
- File Formats: .fla, .swf – Library - Import tothe stage - Import to Library - Color Swatches -Grid, Guide & Rulers - Creating New Document - Working on Stage.

UNIT II

Using Layers: About Layers - Create - Delete Layers, Rename Layers - Lock & Unlock Layers - Type of Frames: Key fame - Blank Frame - Onion Skin – FPS – Symbols – Graphics - Movie Clip & Button – Tweening - Types of Tweens - Object & Merge Drawings-Gradient Color - Color Effects

UNIT III

Filters, Shape Tween, Shape Hint Tween, About Mask, Layer Mask, Ease in and Ease out Animation, Working Frame - by - Frame Animations, Working on Tween Animation, Character creation - Animation - Creating Storyboard, Creating any Cartoon Character, Creating Background Scenes, Using Bone Setup Tool, Lip Movements, Adding Audio to Scene, Publish Movie, Publish Setting.

UNIT IV

Online Frame Work - Types of E - learning's - ADDIE model for E-learning - Analysis and Design – Development – Implementation – Evaluation - Action Script, Interfaceof Action Script in Flash, Uses of Action Script, Event Handling, Using Code Snippets, Drag & Drop, Moving with KeyboardArrows, Go to Frame and Stop, Play & Stop Sound Layout Creation - Timeline Actions- Creating Frame- ActionControlling Sound -Sound Controls– Video Controls- Handling Components- ApplyingBehavior.

UNIT V

Action Script on Buttons, Movie Clips, Event Handlers, Create a Slide Show, Creating an Interactive Flash Game, Flash File Publishing, Export Options, Publish Settings from Flash to After Effects Working on Adobe After Effects, Export Flash to After Effects, Create Character Animation in After Effects, Export to Movie Format, Test Movie.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. Understand and apply the symbols, animation keys
2. Analyze the shapes and articulated motions, Navigation menus and interactive movieclips
3. Evaluate the developed project

COURSE 8: 2D ANIMATION

Practical	Credits: 1	2 hrs/week

4. Practical Syllabus:

1. Creating Web Banners in Adobe Flash
2. Creating a Logo Animation in Adobe Flash
3. Creating Frame by Frame animation
4. Draw Cartoon Animation using reference.
5. Create Lip Sink to Characters
6. Using filters & Special effects
7. Create a scene by using Mask layers animation

5. References:

1. The Animator's Survival Kit by Richard Williams, Straus & Giroux Pub. (U.S.A)
2. Flash Professional CC Class Room In a Book - Pearson

6. Co-Curricular Activities:

- Demonstrate or exhibit the graphics animation and school projects
- Seminar/workshop on E-Learning and 2D Animation
- Study tour to visit 2D animation production house

COURSE 9: FUNDAMENTALS OF FILM MAKING

Theory	Credits: 3	3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

    1. Understanding the Language of Film

    2. Proficiency in Technical Skills

    3. Scriptwriting and Storytelling

    4. Cinematography and Camera Techniques

    5. Film Analysis and Critique

2. **Syllabus:**

UNIT I

The history of Indian cinema and world cinema, the film making fundamentals, what is a roleof a film maker, the film industry in India, the art and science of film making, the technology and equipments, introduction to script development: how to write a good script, inspiration to a story, research, commercial storytelling, how to work on a project, time management

UNIT II

Research material for script development, interesting journals; inspirational music: how to let your mind free, ready to strike ideas when they hit; surf internet; research by studying the time period; characters, customs, fashions, technologies, values of the world, how to make yourself organized, find a quiet place, ambience which will make you inspire, avoid needless distraction, writing is a part of focus, be preparedwith note pad; developing a premise: the set is to develop story structure for the movie. Fiction or nonfiction genre format plot type.

UNIT III

Working with the writer, story structure, preproduction: breaking down the script determining the budget; securing the financing, scouting locations, casting; hiring the crew; securing equipment; scheduling the shoot dates

UNIT IV

Establish home base where production efforts can be coordinated. resources for the set up; legal consultations, budgeting: choose a business formula; plan; form a company, getting the appropriate quote for equipments, locations, personnel, cast and crew, shape the budget; working with the line producer; tips to keep budget low.

UNIT V

lining the script; scene breakdown sheets; determine the number of shooting days; making thedaily schedule; finalizing the schedule; production process, introduction to location design, finding location; securing a locationcommunity relations; filmcommissions ; during production

3. **SKILL OUTCOMES:** Students after successful completion of this course will be able to:

1. Understanding the film production process
2. Scriptwriting and storytelling
3. Camera operation and cinematography
4. Production design and art direction

COURSE 9: FUNDAMENTALS OF FILM MAKING

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Single short film
- Process film
- Visual continuity film
- Observation film
- Short film (2 to 3 minutes)

5. References:

1.   The filmmaker's handbook: a comprehensive guide for the digital age (2013 edition)bySteven ascher and Edward pincus

2.   Directing: film techniques & aesthetics (fifth edition, 2013) by Michael rabinger andMickhurbis-cherrier

6. Co-Curricular Activities:

- The teacher can guide students in understanding screenplay structure
- Assign film analysis projects to students
- camera angles, lighting, composition, and other technical aspects of filmmaking
- Guest lectures and industry visits
- Film festivals and showcases

COURSE 10: NUENDO

Theory	Credits: 3	3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

    1. Understanding of Nuendo Interface
    2. will learn how to effectively record and edit audio using Nuendo
    3. Nuendo offers powerful MIDI sequencing capabilities
    4. will learn about the principles and techniques of audio mixing using Nuendo
    5. Post-Production and Sound Design

2. Syllabus:
UNIT – I

Introduction to Nuendo, The Getting Started, System requirements and installation, Minimum requirements, hardware installation, setting up system for audio production, hardware and its drivers.

UNIT – II

Recording audio - Creating a new project, Setting up the VST Connections, Level settings and recording, Playback, Recording modes with cycle off, Cycle recording, Stacked recording

UNIT – III

Editing audio - Event operations, Event envelopes, processing audio, recording and editing MIDI, Introduction, Creating an Instrument Track, Browsing sounds, MIDI recording, MIDI playback, recording modes with cycle off, Cycle recording, The Key Editor, The Controller lane

UNIT – IV

Working with loops - Loop Browser, Adding loops, making copies, Insert into Project, external MIDI instruments, setting up MIDI devices, setting up VST connections for external instruments, Monitoring external MIDI instruments, Recording MIDI and external instruments

UNIT – V

Mixing and effects – Introduction, Setting levels, Setting pan, Mute and solo, Adding EQ, Audio effects, About automation, Exporting, Surround production, Surround busses, Setting up a surround mix, Recording in surround, Exporting a surround file.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

    1. Audio Recording and Editing
    2. MIDI Sequencing and Virtual Instruments
    3. Audio Effects and Processing
    4. Post-production for Film and Video

COURSE 10: NUENDO

Practical	Credits: 1	2 hrs/week

4. Practical Syllabus:

- Recording audio
- Editing audio
- Recording and editing MIDI
- Working with loops
- Mixing and effects
- Surround production

5. References:

1. "Nuendo Power!" by Robert Guérin
2. "The Mixing Engineer's Handbook" by Bobby Owsinski
3. "Mixing and Mastering with Cubase" by Matthew Loel T. Hepworth
4. Online Courses and Video Tutorials: Platforms like Udemy, LinkedIn Learning, and YouTube offer awide range of Nuendo courses and video tutorials created by industry professionals

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.
2. Invite industry professionals or experienced sound engineers to deliver guest lectures or workshops
3. Peer Learning Sessions
4. Organize visits to professional recording studios or sound production facilities

COURSE 11: SCENCE OF SOUND

Theory   Credits: 3   3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

1.   Understanding the Nature of Sound

2   Explore the fundamental principles of acoustics

3.   Sound Production and Perception

4.   Sound Measurement and Analysis

5.   Problem Solving and Critical Thinking

2. Syllabus:
UNIT – I

Introduction to Sound – Theory of Recording – Fundamentals of Electronic Sound Spectrum and Frequencies – Elements of Recording. Definition and nature of sound; sound and itsrelevance use and importance in communication

UNIT – II
Units of Sound – Structure of Recording – Types of Formats – True Sound
Reproduction –Conversion

UNIT – III

Sources of sound, microphones and their types and uses, assessment of quality of sound

UNIT – IV

Sound engineering techniques, dead air, sound and silence, integration of sound and visual,soundmessaging.

UNIT – V

Sound in the era of multimedia – application in the media platforms and formats – soundbytesand AV clips on Internet, SMS and MMS etc.

3. **SKILL OUTCOMES:** Students after successful completion of this course will be able to:

1.   Understanding of the Properties of Sound

2.   Ability to Analyze and Measure Sound

3.   Familiarity with Sound Waves and Waveforms

4.   Understanding of Musical Acoustics

COURSE 11: SCENCE OF SOUND

Practical	Credits: 1	2 hrs/week

4. Practical Syllabus:

- Studio setup
- Acoustics
- Sound isolation material
- Studio wiring
- DAW
- Mikes & preamps
- Audio interface
- Basics of recording

5. References:

1. Alten Staley, Audio in Media. New Jersey, Belmont, 1981.

2. Nisbett Alec, The Technology of Sound Audio. London, Focal Press, 1979.

3. Glyn Alkin, Sound Recording and Reproduction, London, Focal Press, 2000.

6. Co-Curricular Activities:

1 Seminars, Group Discussions, Quizzes and Debates etc.

2 Invite professionals from the field of acoustics or sound engineering to deliver guest lectures

3 Conduct hands-on experiments and demonstrations in class to help students visualize and comprehend various sound phenomena

4 Organize workshops where students can actively engage in activities related to sound

COURSE 12: STORY BOARD DESIGN

Theory	Credits: 3	3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

1. Understanding the Purpose of Storyboarding
2. Knowledge of Storytelling Techniques
3. Mastery of Visual Communication
4. Collaboration and Communication Skills
5. Time Management and Deadline Adherence

2. Syllabus:

UNIT – I

Studying colors and color mediums to understand the formal structure of color through analysis of colortheory and notation.

UNIT – II

Experience of color through experiments in various mediums: Poster colors, water colors, Pastels, Acrylic, Color Harmonies: Complementary, Split Complementary, Warm Colors, Cool Colors, Hue, Tint and Shadesetc.

UNIT - III

Sketching: Indoor and outdoor Studies, Landscape in pencil Crayons, Pen and ink, Water Color, Poster colors etc. Introduction to gesture drawings, Quick Figures, 5-minute figure studies.

UNIT - IV

Story Boarding: To understand the formal structure of story through storyboard drawings, creating storytelling images, working with single images to tell stories and do gag drawings, Structuring a scene,Finding ways to have progression and punctuation in a sequence.

UNIT - V

Cartoon Character Anatomy: Cartoon Drawing, Proportions, Weight and Balance, Stick figures, Gesture drawing, Expressions.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. learn how to communicate ideas visually using various techniques such as composition
2. Sketching and Illustration
3. learn about composition, color theory, typography, and other elements that contribute to visualaesthetics and readability
4. Production Process

COURSE 12: STORY BOARD DESIGN

Practical	Credits: 1	2 hrs/week

4. Practical Syllabus:

1. Exploring different types of storyboards (film, animation, advertising)
2. Studying the basic elements of a storyboard (frames, panels, camera angles, composition)
3. Understanding visual communication principles (lines, shapes, colors)
4. Learning to convey emotions and moods through visual elements
5. Practicing different drawing styles and techniques
6. Exploring different camera angles and their effects on storytelling
7. Studying shot composition techniques (rule of thirds, leading lines)
8. Analyzing the impact of camera movement on storyboarding
9. Refining and polishing the final storyboard

5   References:

5. The Storyboard Artist: A Guide to Freelancing in Film, TV, and Advertising" by Giuseppe Cristiano

6. Prepare to Board! Creating Story and Characters for Animated Features and Shorts" byNancy Beiman

7. Storyboarding Essentials: SCAD Creative Essentials by David Harland Rousseau

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Assign students to work in teams on storyboard design projects

3. Arrange visits to relevant places such as animation studios

4. Workshops and Skill-building Sessions

COURSE 13: CHARACTER ANIMATION

Theory	Credits: 3	3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

1. Understanding Animation Principles. 2. Proficiency in 3D Animation Software 3. Animation Workflow and Pipeline

2. Syllabus:

UNIT – I

Terminology for 3D Animation: Timeline, Key frame, Frame rate, Poses, Line of action, Working with 3d Rigs: Importance of poses, Creation of poses from REFERENCES images, Importance of familiarizing with the rig's controllers, Understanding the body mechanics: COG (Center of gravity), Importance of line of action and balance in a pose, what is twinning? Silhouette and its application in creating a perfect pose, Positive and negative spaces

UNIT – II

Setting up for animation using Animation Settings: Tangents, Auto Key, Animation Start/End, Playback Start/End, Playback Speed etc. Concept of pose-to-pose in 3D animation? Animation passes: Pass 1Blocking, Pass 2-Breakdowns, Pass 3-Inbetweens.

UNIT - III

Principles of traditional animation applied to 3D computer animation: Squash and Stretch, Timing, Anticipation, Staging, Follow Through and Overlapping Action, Straight Ahead Action and Pose-to-PoseAction (Keyframes), Slow In and Out, Arcs, Exaggeration, Secondary action, Appeal

UNIT - IV

Cycling Animation: Walk, Run, Sneak cycles, Sad walk, Happy walk, Jump. Using exposure sheets,Adjusting timing and spacing with dope sheet. Exercises in weight and mass, Secondary Action, Fast Action.

UNIT - V

Animation constraints. Animating the body: Body language, Action, Reaction, Push and Pull, Lift, Throw.Discuss the use of video REFERENCESs in animation

3. **SKILL OUTCOMES:** Students after successful completion of this course will be able to:

1. Keyframe Animation
2. Lip Sync and Facial Animation
3. Acting and Performance
4. Scene Composition and Cinematography
5. Portfolio Development

COURSE 13: CHARACTER ANIMATION

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Camera setting for layout
- Camera animation
- Squash and Stretch
- Working with Trax Editor
- Throwing an axe
- Animating flying text
- Path animation
- Basic relationships: Constraints
- Basic relationships: Set – Driven key
- Working with full body IK animation rig

6   References:

a. The Storyboard Artist: A Guide to Freelancing in Film, TV, and Advertising" byGiuseppe Cristiano

b. Prepare to Board! Creating Story and Characters for Animated Features and Shorts" by Nancy Beiman

c. Storyboarding Essentials: SCAD Creative Essentials by David Harland Rousseau

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.
2. Assign students to work in teams on storyboard design projects
3. Arrange visits to relevant places such as animation studios
4. Workshops and Skill-building Sessions

COURSE 14: INTRODUCTION TO PHOTOGRAPHY

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:
   1. Fundamental understanding of photography
   2. Mastery of camera settings
   3. will develop an eye for composition and learn how to create visually compelling images
   4. will understand the ethical responsibilities of photographers

2. Syllabus:

UNIT – I

A comprehensive history of cameras.from pinholes to point-and-shoots, understanding of camera history, ending with an analysis of the options available to you today. The two essential elements in any photograph workflow aswe explore camera function via lenses and filters. camera and lens combination options, diaphragm and aperture,then move on to master f-stops and focal strength.

UNIT – II

how to use your camera, beginning with a comprehensive review of your camera's viewing system, masteringtechniques for adjusting both depth of field and shutter speed. Understanding most effective photographic techniques of visual organization and storytelling.

UNIT – III

Image capture, explore the mechanics behind how images are recorded digitally, including a brief bit of context regarding how they're captured on actual film. Understanding digital image sensors and will begin toadditionally understand the intricacies of film exposure aswell.

UNIT – IV

Esthetically pleasing exposure. The role your equipment plays in exposure determination then move on to master the 5 basic exposure modes as we continue to help you achieve that perfect, well-lit shot. Workflowand image editing, workflow and image editing in post- production, the phase of work that begins with the camera and the capture of images in raw, jpeg or tiff formats.

UNIT – V

Using natural and available light, working with both natural and artificial light, learning how to use daily basis light through the eyes of an ever-diligent photographer. Examining the various types of flash units and how they work, using appropriate flash lighting to its best advantage. From pop-up flash to wireless, working on theperfect artificial lighting scenario to capture whatever mood you're hopingto achieve in your future Shots.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. principles of composition and how to effectively frame their subjects
2. Exposure and Lighting
3. understand how to adjust white balance settings to achieve accurate and desired colors in different lighting conditions
4. learn to see photographic opportunities in their surroundings

COURSE 14: INTRODUCTION TO PHOTOGRAPHY

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Portrait shoot
- Expermentation with shutter speed
- Expermentation with appreture
- Different light (day light, flash light,night light)
- Experimentation with iso

5. References:

   1. Understanding Exposure, 3rd Edition: How to Shoot Great Photographs with Any CamerabyBryan Peterson

   5. The Photographer's Eye: Composition and Design for Better Digital Photos byMichaelFreeman

   6. Better Photo Basics: The Absolute Beginner's Guide to Taking Photos Like a Proby JimMiotke

6. Co-Curricular Activities:

   1. Seminars, Group Discussions, Quizzes and Debates etc.

   2. Organize group outings to interesting locations where students can practice their photographyskills under the guidance of the teacher

   3. Hold regular photography contests or challenges within the class

   4. Photography exhibitions

   5. Invited Lectures and Presentations on related topics by field experts/industrial experts.

COURSE 14: AV PRODUCTION

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

    1. Knowledge of AV Equipment

    2. Proficiency in using editing software to assemble and edit audio and video content

    3. Scriptwriting and Storytelling

    4. Production Techniques

    5. Collaboration and Teamwork

2. Syllabus:

UNIT – I

Basic AV System – Expanded Studio & Electronic Field Production Systems –

ProductionElements – Production Personnel – Television Studio – Studio Control Room – Master

Control –Studio Support Areas

UNIT – II

Analog and Digital Camera Television – Basic Image Creation – Basic Colour of the Video Display

– Introduction to Digital – Benefits of Digital Television – Scanning Systems – Interlaced and

ProgressiveScanning – DTV Systems – Flat – Panel Displays, HDTV and 3D TV Technologies.

UNIT – III

The Television Camera – Parts of the Camera – How the Camera Works – Types of Cameras –

ElectronicCharacteristics – Operational Characteristics – Light to Video Image.

UNIT – IV

Lenses – Its Types – Operational Characteristics & Controls – Angle of View – Standard Camera

Mounts & Movements – Special Camera Mounts – Camera Operation & Picture Composition –

Lighting Instruments & Lighting Controls. Light Intensity, Lamps and Color Media.

UNIT – V

Lighting – Quality of Light – Color Temperature – Lighting Functions – Special Lighting
Techniques –Contrast – Balancing Light Intensity – Light Plot – Operation of Studio Lights –EFP/ENG
Lighting.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. Understanding AV Production Principles
2. operate different types of cameras effectively, including DSLR cameras, camcorders, and digitalcinema cameras
3. Audio Recording and Editing
4. understand the editing workflow, including importing footage, organizing media, trimming,transitions, adding effects, and exporting the final product

COURSE 14: AV PRODUCTION

Practical   Credits: 1   2 hrs/week

---

4. Practical Syllabus:

- Introduction to audio and video equipment.
- Basic camera operations and settings.
- Introduction to audio recording techniques.
- Camera techniques and shot composition.
- Lighting principles and techniques.
- Directing talent and managing the production process.

5. **References:**

a. The Filmmaker's Handbook: A Comprehensive Guide for the Digital Age" by Steven Ascherand Edward Pincus

b. The Complete Guide to Film and Digital Production: The People and The Process" byLorene Wales:

c. Video Production Handbook" by Gerald Millerson and Jim Owens

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Film screenings and analysis

3. Guest lectures and workshops

4. Field trips and location shoots

COURSE 15: AV CONTENT CREATION

Theory	Credits: 3	3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

    1. Understanding of AV Production Processes.
    2. Visual and Aesthetic Principles
    3. gain knowledge and skills in audio production, including recording techniques, voice-over narration, sound design, and mixing
    4. understand copyright laws, licensing requirements, and ethical considerations related to AV content creation
    5. Audience Engagement and Distribution

2. Syllabus:

UNIT – I

Video Pre-Production Process: Pre-production, Shooting and post-production, white balance, Aperture,Shutter speed, and focus in a video camera to optimize the picture quality in video

UNIT – II

utilize different shot types including the wide shot, establishing shot, long shot, medium shot, close up,point-of-view, and over-the-shoulder.

UNIT - III

Introduction to Cinematography: Introduction to Digital Video Cinematography, Building blocks, Lensesand Cameras. Zoom Lens, Prime Lens.

UNIT - IV

Types of Cameras: HD Cameras, Basics of Film Camera, Difference between Film Camera and Digital Camera, DSLR and HDSLR Cameras, Lighting, Psychology of light, Visual Environment, Directional Effect of Light, Lighting design.

UNIT - V

Introduction to Adobe Premiere: Introduction and history of evolution of the specialized stream calledEditing. User Interface, Basic Editing knowledge.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. story structures, character development, and effective storytelling techniques specific to the audio-visual medium

2. create visually appealing videos, ensuring proper framing, lighting, and audio quality

3. visual design principles and how to apply them to audio-visual content

4. Post-production and Editing

COURSE 15: AV CONTENT CREATION

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

1. Overview of camera equipment, lighting, and audio devices
2. Setting up your recording environment
3. Techniques for capturing high-quality audio and video footage
4. Conducting interviews and managing on-camera talent
5. Managing multiple camera angles and shots
6. Introduction to video editing software (e.g., Adobe Premiere Pro)
7. Basic video editing techniques (cutting, trimming, transitions)
8. Enhancing audio quality (cleaning up noise, adding music and sound effects)
9. Adding graphics, titles, and subtitles

5   References:

1 In the Blink of an Eye: A Perspective on Film Editing" by Walter Murch

2 YouTube: An Insider's Guide to Climbing the Charts" by Alan Lastufka andMichael W. Dean

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Film screenings and analysis

3. Guest lectures and workshops

COURSE 15: 3D ANMATION

Theory	Credits: 3	3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

1. Understanding of 3D Animation Principles
2. Proficiency in 3D Animation Software
3. Modeling and Texturing Skills
4. Collaboration and Communication

5. Animation projects that showcases their skills and creativity

2. Syllabus:

UNIT – I

Layout Design – working on principals of animation – Camera settings in Maya - Setting up Scene for rendering. & Rendering concept

UNIT – II

Basic animation – Animation types – Key frame Animation – understanding Animation Work Flow

UNIT - III

Nonlinear Animation: Introduction to Nonlinear Animation – Understanding Trax editor – Creating poses – working with poses - Creating clips – working with clips – Modifying clips – Blending clips

UNIT - IV

Working on: squash and stretch and timing, Staging and exaggeration, Follow through understand the fluid movement of cloth and hair, Mechanics. Effect of forces and weight, working on acting basics. Mastering emotions

UNIT - V

Rendering – Rendering setup – render view window – Reflections and Refractions - using cameras and motion blur – batch rendering – render layers

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. Proficiency in 3D Modeling
2. Rigging and Character Animation
3. Lighting and Rendering
4. Portfolio Development

COURSE 15: 3D ANMATION

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

1. Creating and manipulating objects
2. Working with the timeline

3. Key frame animation
4. Understanding the animation timeline
5. Animation curves and tangents
6. Using the Graph Editor for fine-tuning animation

References:

*. Disney Animation: The Illusion of Life", Ollie Johnson & Frank Thomas (1995)

*. The Animator's Survival Kit". Richard Williams, Faber & Faber, (2002)

*. Animating with Maya: 3D Animation and Visual Effects for Film and Video" by Holman Wang

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Workshops and Demonstrations

3. Assign group projects that require students to work together in teams

4. Competitions and Showcases

COURSE 16: ADVANCED CHARACTER ANIMATION

Theory	Credits: 3	3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

    1.   Understanding Animation Principles. 2. Proficiency in 3D Animation Software

    3.Animation Workflow and Pipeline

2. **Syllabus:**

UNIT – I

Preparing to animate – Reference sources – Video cameras – DVDs & video tapes – illustrated books – paper and pencil – Sound recordings

UNIT – II

Animation process – posing – timing – refining – Animating a character for jum – The relax pose – Anticipation pose – Compression – Moving hold – uncoil pose – top pose – contact pose – impact pose – stand 01 stand 02 – staging and posing – establishing timing

UNIT - III

Graph editor – walk cycle – Frame by frame posing – Extreme keys - in-betweens – break down keys – working on animation principals

UNIT - IV

Intermediat animation and timing techniques – Building stronger poses and timing – review of animation curve editing tools and techniques – working with motion curves, keys and tangents - working on graph editor, trax editor and dope sheet

UNIT - V

Introduction to motion capture – working on motion capture files – Cartoon animation – snappy animation – realistic animation.

3. **SKILL OUTCOMES:** Students after successful completion of this course will be able to:

1. Keyframe Animation
2. Lip Sync and Facial Animation
3. Acting and Performance
4. Scene Composition and Cinematography
5. Portfolio Development

COURSE 16: ADVANCED CHARACTER ANIMATION

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Layout scene setup and camera animation
- Walk cycle
- Run cycle
- White and Jump

5   References:

    a. Animating with Maya: Advanced Techniques" by Timothy Albee

    b. Learning Autodesk Maya 2022: A Comprehensive Guide to Character Animation and Rigging" by Dariush Derakhshani and Jarrett King

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.
2. Assign students to work in teams on storyboard design projects
3. Arrange visits to relevant places such as animation studios
4. Workshops and Skill-building Sessions

COURSE 16: 3D LIVE INTEGRATION

Theory	Credits: 3	3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

1. Understanding Live Integration pipeline2. Proficiency in Live integration Software

3. Live Integration Workflow

2. Syllabus:

UNIT – I

Introduction to Autodesk Match mover–Interface and tools – Interaction with live cameras using in production - working on 3D camera and 2D camera–understanding camera formats – Knowing 3D camera and live camera – familiarizing in camera animation.

UNIT – II

Understanding visual effects pipe line - Understand the basic principles of match moving - matching the perspective in a 3D animation program - integrating 2D and 3D - Understand the core principles of photogrammetric - key concepts and procedures involved with 2D tracking - identify and correct problems with 2D tracking.

UNIT - III

camera calibration - underlying mechanisms involved with calibration – Solve Cameras – working on 2D tracking - understand what a "good" calibration looks like and how to achieve it in a match moving program - Understand the core concepts of camera calibration –Understand the concepts and procedures used in automatic tracking - Working on automatic tracking.

UNIT - IV

working on cameras and lenses – film gate sizes and lens distortion – basic process of integrating the solution from a match moving program into a 3D scene - adjust the coordinate system - perform final checks of the match move - strategies for delivering scenes

UNIT - V

using tracking markers - highly recommend to work on green screen - Understand the various aspects of a match mover's job- Matchamation blends techniques from animation and rotoscoping - Demonstrate the techniques that make matchamation, object tracking and geometry tracking difference between object tracking and geometry tracking - Demonstrate alternate ways of using match move data

3. **SKILL OUTCOMES:** Students after successful completion of this course will be able to:

1. Key frame Animation
2. Lip Sync and Facial Animation
3. Acting and Performance
4. Scene Composition and Integration
5. Portfolio Development

COURSE 16: 3D LIVE INTEGRATION

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Moving from 3D to 2D and back again.

- Evaluating the Footage, Defining the Camera.

- Adding Rough Geometry and Refining the Camera.

- Evaluating and Adjusting the Camera, Calibration, and the Optics of Photography.

- Anatomy of a 2D Track, Track Stationary Objects, Track "True" 3D Positions.

- Evaluating the 3D Nulls, 3D Space.

- Tracking Markers for a Green Screen or Blue Screen, Blending Cameras in Maya.

6   References:

    c. Composite a 3D object into video footage with Boujou, Maya and After Effects by Alanmonroig.

    d. The Invisible Art of Camera Tracking by Tim Dobbert

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Assign students to work in teams on storyboard design projects

3. Arrange visits to relevant places such as animation studios

4. Workshops and Skill-building Sessions

COURSE 17: FACIAL EXPRESSIONS & BLEND MODES

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

   1. Understanding Facial Expressions
   2. knowledge of the underlying facial anatomy and the role it plays in creating different expressions
   3. Creating Realistic Facial Expressions
   4. Blend Mode Techniques
   5. Artistic Interpretation

2. Syllabus:

UNIT – I

Introduction to Facial Animation–Recalling principals of Animation – software and hardware – Character rig analogy – application domain - Shortcut Keys, - Facial rigging process – Morphology – Behaviors – Facial rigging for key frame animation.

UNIT – II

Hierarchies, Transformations, Scale and Pose. - Naming Conventions - Facial Rigging for Key Frame Animation: Techniques - Facial Rig Mechanics – Facial Rig Controls - Facial Rigging for Key Frame Animation.

UNIT - III

Facial Animation Control–Goals and Objectives - Methodology – Studying the Anatomy of the Human Head and Face - Development of an Expression Taxonomy - Development of a Polygon Model Mesh - Collection of Reference Data - Superposition of Overlapping Blend shapes - Demonstration of the Developed Model With Several Facial Animations.

UNIT - IV

Implemented Muscle Actions – Inner Brow Raiser (both sides) - Outer Brow Raiser (both sides) – Brow Lowerer (both sides) – Eyes Closed (both sides) – Nose Winkler – Upper Lip Raiser (both sides) - Lip Corner Puller (both sides) - Lip Stretcher (both sides) - Lip Corner Depressor (both sides) - Chin Raiser - Lip Tightener - Lip Puckerer.

UNIT - V

Introduction to lip sync - The Lip Sync Process - Determine the Speech Pattern - Analyze the Audible Dialog to Determine Phonemes - Use Timing Table to Set Frames - Getting the Finished Animation - Phoneme Dropping Guidelines - Synchronization Time and Artistic Freedom - Creating Data Structures - Collecting Information – Discussion – Conclusion.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. Understanding Facial Expressions
2. Facial Analysis and Interpretation
3. Acting and Performance Skills
4. Facial expressions can contribute to the development of emotional intelligence

COURSE 17: FACIAL EXPRESSIONS & BLEND MODES

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Creating blend shapes for facial animation

- Know the Importance of Group. Creating Controller's for the object.

- Doing Exercises on Spacing and Timing.

- Follow Through Animation.

- Knowing Joints. Understand Local & World Orientation's. Knowing IK RP & SC Solver.

- Anticipation Actions for face expressions. Follow Through and Over Lapping Setting

- Working on ovals Working on mouth shapes and lip-sync

  5References:

  a. The Art of Maya: An Introduction to 3D Computer Graphics (Paperback) Autodesk Maya Press
  b. Stop Staring: Facial Modeling and Animation Done Right" by Jason Osipa

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Assign students to work in teams on storyboard design projects

3. Workshops and Skill-building Sessions

COURSE 17: SFX & DYNAMICS

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

    1. Understanding of Dynamics Concepts
    2. Proficiency in Maya Dynamics Tools
    3. create and control dynamic simulations, including setting up particle emitters, defining rigid bodyproperties
    4. Integration with Other Maya Features

2. Syllabus:

UNIT – I

What is dynamic simulation? Discuss the application of dynamic simulation in animation movies and visual effects, Movement with forces, Different types of forces involved in motion: Applied force, Frictional force, Tension force, Normal force, Air resistance force, Spring force, Gravitational force etc.

UNIT – II

What is Particle system? Study of Particles: Emitters, Animating particles, Render the particles, Goals, Multiple goals, Particle instancer, nParticle, nParticle collisions, Simulating water using particles, Applying fluid behavior to particles to create ink or dust-like effect

UNIT - III

Soft and Rigid Bodies: Soft bodies, Rigid bodies, Rigid body constraints, Edit rigid body constraints, Springs, Soft and rigid body limitations, Edit rigid body attributes

UNIT - IV

Maya nucleus, Introduction to nCloth, nCloth constraint, Introduction to nHair, Introduction to fluid effects: Clouds, Fire, Smoke, creating an ocean etc.

UNIT - V

Using dynamics simulation in animation movies to simulate cloth, water, fire, ropes etc. Combining digitalplateswith live action footage: Final composite using a compositing softwares

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. Understanding of Special Effects Principles
2. Proficiency in Maya Dynamics
3. Integration with Other VFX Elements
4. Problem-Solving and Troubleshooting
5. Portfolio Development

COURSE 17: SFX & DYNAMICS

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Understanding the different types of simulations (particles, fluids, cloth, rigid bodies)

- Introduction to the Maya Dynamics interface and tools

- Working with particle attributes (size, color, lifespan, etc.)

- Creating fluid containers and emitters

- Controlling fluid behavior with forces and fields

- Setting up cloth objects and constraints

- Creating tearable cloth effects

       6   **References:**

            a. Maya Studio Projects: Dynamics" by Todd Palamar
            b. Mastering Autodesk Maya 2016: Autodesk Official Press by Todd Palamar

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Workshops and Demonstrations

3. Guest Lectures and Industry Experts

4. Study Groups and Peer Learning

COURSE 18: LIGHTING FOR ANIMATION

Theory	Credits: 3	3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

    1. Understand the fundamentals of lighting in 3D animation

    2. Master the lighting tools and features in Autodesk Maya

    3. Create realistic lighting setups

    4. Understand the importance of composition and cinematography in lighting

2. Syllabus:

UNIT – I

Introduction to Lighting & Rendering, Basic Lighting, 3 point lighting, light types, rendering a frame, rendering activities table, Assigning shading groups to objects
Creating and texturing shading groups, Opening related windows and editors, using the Shading Group tool

UNIT – II

Lighting a Scene, How lights work in Maya, Creating lights, Linking lights, Using the Light Linking tool, Light types Ambient lights, Directional lights, Point lights, Spot lights, Common light attributes, Intensity Sample section, Common Attributes, Shadows section

UNIT - III

Rendering an animation **-** Animation attributes (Render Globals), Output Extensions, Special Effects (RenderGlobals), Resolution attributes (Render Globals: defaultResolution), Understanding the Shading Group Editor, Creating shading groups, Selecting shading groups, Adding items to a shading group, Removing items from a shading group, Renaming shading groups, Changing the color assignment, Using the Shading Groups Editor

UNIT - IV

Loading the Connection Editor, Navigating a node network, Making connections, Breaking connections, Connection Editor menu and button options, Using the Relationship Selecting objects and lights, Light linking, Assigning shading groups to objects, Rendering Flags. Selecting objects, textures, and materials, Setting Rendering Flags

UNIT - V

Batch Rendering. Batch rendering from the command line, Batch rendering within Maya Using Image Planes, Creating a camera, Attaching an image plane, Using the Multilister, Using drag and drop, Loading an image, Deleting image planes, Loading a scene in the image plane Image plane attributes, Placement attributes for attached image planes, Placement attributes for fixed image planes.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. fundamental lighting principles, such as color theory, light intensity, shadows, and reflections

2. using Maya's lighting tools and features

3. analyze a scene and determine the lighting requirements based on the mood, setting, and storytelling needs

4. Shadow and Reflection Control

5. Rendering and Optimization

COURSE 18: LIGHTING FOR ANIMATION

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Lit up the scene for animation

- 3 pont lghting

- Rendering activities

- Render-node swatches

- Single frame rendering & Batch rendering

  7 References:

  a. Mastering Autodesk Maya 2018 by Todd Palamar
  b. Maya Lighting and Rendering by Aaron F. Ross

6. Co-Curricular Activities:
1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Organize workshops where students can learn advanced lighting techniques from industry professionals or guest speakers

3. Assign group projects that require students to work together on lighting scenes or sequences

COURSE 18: RENDERING

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

    1. Understanding Rendering Concepts.

    2. Proficiency in Maya Rendering Tools

    3. Shading and Materials

2. Syllabus:

UNIT – I

Overview of the rendering process - Different rendering techniques and algorithms - Understanding the importance of rendering in 3D graphics - Exploring the Maya Render Settings window

UNIT – II

Configuring render resolution and aspect ratio - Understanding image formats and compression options -Setting up render passes and render layers

UNIT - III

Overview of Maya's material creation workflow - Understanding different material types (lambert, blinn, etc.) -Working with texture maps (color, bump, specular, etc.) - Types of light sources (point lights, spotlights, area lights, etc.)

UNIT - IV

Overview of different renderers in Maya (Arnold, Mental Ray, etc.) - Understanding the strengths andlimitations of each renderer - Setting up renderers in Maya and configuring render settings

UNIT - V

Using render layers to isolate different elements in a scene - Setting up render passes for compositing purposes
- Configuring render layer and pass settings in Maya -

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

    4. Lighting and Illumination Techniques

    5. Material Creation and Shading

    6. Texturing and UV Mapping

    7. Render Optimization and Workflow

    8. Problem Solving and Troubleshooting

COURSE 18: RENDERING

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Understanding the rendering pipeline
- Configuring render settings in Maya
- Understanding image formats and resolutions
- Batch rendering and render queuing
- Image-based lighting and HDRI

5References:

a. Introducing Autodesk Maya 2020" by Dariush Derakhshani
b. Rendering with Maya and Arnold: The Definitive Guide to Rendering with Arnold in Autodesk Maya" by Lee Lanier

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.
2. Workshops and Demonstrations
3. Assigning group projects that involve rendering in Maya
4. Industry Visits and Guest Lectures

COURSE 19: DRAWING & DIGITAL ART

Theory	Credits: 3	3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course

   @ have a very good knowledge of basics of drawing and material handling andunderstanding. @ understand the inner form of human anatomy to get knowledge for illustration

   @ gaining the composing knowledge of landscape and cityscape drawing and painting. @ create own character design and concept for animation

2. **Syllabus:**

UNIT – I

Drawing basics, material handling and understanding, teaching variety of lines, vertical, horizontal, diagonal, curved lines, dotted lines, and basic shapes, forms, geometrical shapes and non geometrical shapes, drawing balance, paper balance, freehand drawings, creating image usingcombinations of different lines,

UNIT – II

Understanding skeleton forms, head, rib bone, pelvic bone, hand and fingers, legs, Three views ofthe head andthe skull, The study of different views of skeleton, movement of bones, front, back, side views of skeleton.

UNIT - III

Measurement of anatomy, male and female, head calculation measurement, eye calculation measurement, different of male anatomy measurement and female measurement, comparing maleand female face measurement horizontal and vertical balance of anatomy

UNIT - IV

Introduction of Perspective, importance of Perspective, perspective terminology, horizon line, eyelevel, vanishing point, view point, orthogonal line, ground line, picture plane, Types of perspective views, One point perspective, Two point perspective, Three point perspective ,bird's view, worm's view.

UNIT - V

Head types, cartoon eyes, cartoon noses, cartoon mouths, cartoon ears, hands and feet, body typesand proportions, developing a cartoon character out of an object, various action poses of a cartooncharacter, 2D background design, landscape, cityscape and seascape, colorful background design,layer alignment, creatingshots for scene.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

5. Understanding basic concept of digital art
6. Create different types of patterns
7. Designing basic cartoon characters
8. Creating storyboards for commercials

COURSE 19: DRAWING & DIGITAL ART

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Understanding digital file formats and resolution
- Fundamentals of digital drawing
- Utilizing layers and brushes in digital art
- Understanding color theory and its application in digital art
- Exploring different painting styles and techniques
- Incorporating storytelling elements in illustrations

5. References:

1. Digital Art Masters" series by 3DTotal Publishing
2. The Digital Art Book" by Imagine Publishing

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.
2. Case study of understanding the human anatomy for illustration
3. Group discussion on the pros and cons of digital art and manual art flexibility and usage of software

COURSE 19: ADVANCED GRAPHICS DESIGN

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course

@ have a very good knowledge of basics of drawing and material handling

andunderstanding. @ understand the inner form of human anatomy to get knowledge

for illustration

@ gaining the composing knowledge of landscape and cityscape drawing and

painting. @ create own character design and concept for animation

2. Syllabus:

UNIT – I

Introduction of Graphics design – About Photoshop , Getting Started with Photoshop, Working with Basicselection ,Working with Images , Layer concepts , Colour correction –Photo retouching

UNIT – II

Painting in Photoshop, Working with the pen tool, Mask effect, Effective Title making, Creatingspecial effects – Creating Web templates, Exporting your work to various formats. Using HDR toning for images, variations, filters and gallery.

UNIT - III

Introduction of Illustrator, Interface of illustrator, Dynamic Design Tools, Digital Designing works, Front, page design, Making Clipart, Tracing techniques, Business cards , Banners andposters. Using shapes and lines to complete digital works.

UNIT - IV

Vector Art Design principles, Logo/Flier Design, Working with Text, Colour and Graphics andLayout, Handling Page Elements, Multiple Pages, Typography for any digital work like brochures, Pamplets etc

UNIT - V

Image compositing , print ads making , Magazine , Adjusting Print Settings, color grading forprinting work andvector for digital printing, Title creation for various designs.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

9. Understanding basic concept of digital art
10. Create different types of patterns
11. Designing basic cartoon characters
12. Creating storyboards for commercials

COURSE 19: ADVANCED GRAPHICS DESIGN

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Understanding digital file formats and resolution

- Fundamentals of digital drawing

- Utilizing layers and brushes in digital art

- Understanding color theory and its application in digital art

- Exploring different painting styles and techniques

- Incorporating storytelling elements in illustrations

6. References:

3. Digital Art Masters" series by 3DTotal Publishing
4. The Digital Art Book" by Imagine Publishing

6. Co-Curricular Activities:

  1. Seminars, Group Discussions, Quizzes and Debates etc.

  5. Case study of understanding the human anatomy for illustration

  6. Group discussion on the pros and cons of digital art and manual art flexibility and usage of software

COURSE 20: DGITAL MATTE PAINTING

Theory   Credits: 3   3 hrs/week

1.   **Learning Outcomes:** Students after successful completion of this course

@ Understanding of Visual Design Principles

@ Proficiency in Digital Painting Software

@ Concept Development.

@ Advanced Compositing Skills

2. Syllabus:

UNIT – I

Introduction about Matte Painting, Understanding the difference between Concept Art and Fantasy Art, thumbnail sketching and ideation, layout sketching by hand drawing, working in software using the Pen Tablet ,converting paper to Digital, file format and file size, Aspect Ratio, 2K Resolution.

UNIT – II

This is unit, student learning about Brush stroke, ruler and grid, Rule of third, gradients, Light , shadow, Layers concept, smudge , blur, Overlays, texture, various shapes and sizes of brushes, working with paint tools, mask and layer adjustments.

UNIT - III

In this unit covering the concept of Perspective, types of perspective, understanding the significance vanishing point, Linear Perspective with one point, two points and three points , above eye level, below eye level, Collage techniques, working with atmospheric perspective,

UNIT - IV

Understanding the colour composition, colour perspective, colour shades by atmosphere lighting, highlight, mid tone, shadow, hue and saturation, creating canvas, working with colour correction,merge by colour tone and proportion.

UNIT - V

Background making paint material and software layer distribution, Image composting,understanding the Depthof field, Multi-plane set up in composting, matte layers extractions Matching with 3d objects or live action.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. Understanding Digital Painting Techniques

2. will develop skills in creating imaginative and detailed concept art that effectively

communicatesthe desired visual style and atmosphere.

3. Photo manipulation techniques to integrate and blend different elements into their paintings.
4. Problem-Solving and Creative Thinking

COURSE 20: DGITAL MATTE PAINTING

Practical	Credits: 1	2 hrs/week

4. Practical Syllabus:

- Working on principles of composition, perspective, color theory, and lighting.

- Familiarization with popular digital art software used for matte painting, such as Adobe Photoshop,

- Photo Manipulation Techniques

- Learning the specific techniques used in matte painting

- Exploring the role of matte painting in visual effects

- Exploring advanced techniques in digital matte painting, such as matte painting for 3D environments

7. References:

5. The Digital Matte Painting Handbook" by David B. Mattingly
6. Mastering Digital Matte Painting" by Alp Altiner

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

5. Case study of understanding the matte painting and its importance

6. Participate in workshops, and learn from experienced artists.

7. Group discussion on creative and technical aspects of matte painting

COURSE 20: 3D SHORT FILM MAKING

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course

@ Understanding of 3D Animation Techniques

@ Proficiency in 3D Modeling

@ Rigging and Character Animation

@ Lighting and Rendering Techniques

2. Syllabus:

UNIT – I

Introduction to Maya: Familiarize yourself with the Maya interface, navigation, and basic tools.

UNIT – II

Modeling: Learn the fundamentals of 3D modeling, including creating and manipulating objects, using polygons, NURBS, and subdivision surfaces.

UNIT - III

Texturing and Shading: Explore techniques for applying textures, creating materials, and using shaders to enhance the visual appearance of your 3D models.

UNIT - IV

Lighting: Understand different types of lights, their properties, and how to effectively light your scenes to achieve the desired mood and atmosphere.

UNIT - V

Animation: Dive into the principles of animation and learn how to bring your 3D models to life through keyframing, timing, and motion curves.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

8. understanding story structure, character development, and effective pacing.

9. gain skills in generating and refining ideas for your films. This involves creating concept art,storyboards, and mood boards to visualize their vision.

10. Adding visual effects, titles, and finalizing the output for distribution.

11. provide insights into the professional practices and standards of the animation industry.

COURSE 20: 3D SHORT FILM MAKING

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Rigging: Discover the process of rigging, which involves creating a digital skeleton for your 3D characters and setting up controls for their movement.
- Character Animation: Apply your animation skills to create compelling performances for your characters, focusing on body mechanics, facial expressions, and storytelling.
- Effects and Dynamics: Explore Maya's dynamic simulation capabilities to add realistic physics-based effects, such as fluid simulations, cloth dynamics, and particle systems.
- Rendering and Compositing: Learn about rendering settings, different rendering engines, and how to composite your final 3D shots using software like Autodesk Arnold or other rendering plugins.
- Post-production and Editing: Understand the post-production process, including editing, sound design, and color grading, to bring your 3D short film together.

8. References:

7. The Art of 3D Computer Animation and Effects" by Isaac Kerlow
8. Mastering Autodesk Maya 2022: A Comprehensive Guide to 3D Animationand Modeling" by Todd Palamar

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Create a club where students can watch and analyze short films

3. Encourage students to participate in local or national film festivals and competitions.

4. Group discussion on creative and technical aspects of 3D Short film making

COURSE 21: VIDEO EDITING

Theory   Credits: 3   3 hrs/week

MAJOR COURSE: 19 (A) VIDEO EDTING

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

    12. Work on basic principles involved in editing

    13. tools and techniques available in standard Non-linear video editing

    14. Basic skills in color grading

2. Syllabus:

UNIT – I

Color TV and video recording, Origin of television systems NTSC, PAL, SECAM, History of formats of video - B&C, VHS, SVHS, U-matic, Beta etc. Modern developments - DV.HD Tapeless media HD & LR

UNIT – II

Shooting script and editing script, Cut and shot transition, Match cut, Jump cut, Scene transitions, Editing rushes, Online, Linear AB roll, Logging, Advantages and disadvantages, Editing software, Non-linear softwares. Audible sound, Clapboard synchronization

UNIT - III

Continuous shots, Concept of time and space, Introduction to video editing, Jump cut and editing principles,Time and space concepts

UNIT - IV

Overview of what is meant by "Color Timing", History of color manipulation from early hand color techniques, three strip, Hazeltine, early telecine color timing, Where we are today: Digital intermediate (DI), Color, Da Vincietc. - 4:4:4/4:2:2 etc. 10bit vs. 8bit, resolution etc. DI, Film vs Video latitude, First hands-on session with color. Controlling specified areas of the image through use of secondaries, Shapesvs keys, Tonal ranges, Tracking

UNIT - V

Color grading, Creating mood for the scene: Tinting footages, Exposure adjustments, Brightness and contrast

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

    15. Analysis Modern developments - DV.HD Tapeless media HD & LR

    16. Create Shooting script and editing script

    17. Develop time and space concepts

    18. Analysis color Timing

    19. Create Color grading

COURSE 21: VIDEO EDITING

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Introduction to Adobe Premiere
- Basic Editing Techniques
- Applying Transitions and Effects
- Color Correction and Grading
- Text and Graphics
- Advanced Editing Techniques
- Exporting and Delivery

8 References:

a. Video Production Handbook: Focal Press
b. HD Cinematography: Focal Press
c. Nonlinear Editing: Bryce Button (Focal Press)

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.
2. Assign students various video editing projects that align with the curriculum
3. Conduct workshops and demonstrations where teachers showcase different video editingtechniques and software tools
4. Organize group projects where students collaborate with their peers and teachers to edit videoscollectively

COURSE 21: FILM COLOR GRADING

Theory	Credits: 3	3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

1. Work on Digital Intermediate (DI) softwares
2. Will be able to work on post production of motion picture films.

2. Syllabus:

UNIT – I

In this unit we teach about Cathode,a ray tube (CRT) system, an electron beam is projected at a phosphorcoated envelope, producing a spot of light the size of a single pixel.

UNIT – II

In this unit, Students explore how the Primary and Secondary color correction affects the whole image intensities of RGB and highlights of the entire frame, with these we teach the advanced techniques of color correction and well established digital painting techniques in the era of digitalcinematography.

UNIT - III

In this unit, students will learn the evolution of digital color correction tools with advanced techniques of usingpoint shapes to isolate color adjustment in the specific area of the image. We also teach color keying to isolatethe colors in the image. We teach special training for automationon tracking the image in terms of color to savetime in the production process.

UNIT - IV

In this unit, students will explore the color of Bit Depth with Look Up Table (LUT). We teach about the Color grading is the process of altering and enhancing the color of a motion picture, video image, or still images either electronically, photo,chemically or digitally.

UNIT - V

In spite of all, after this program students will gain knowledge about the DI importance and thescope ofwork.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

1. Understanding the various types of projection and its technology used in theatres
2. Students explore how the Primary and Secondary color correction affects the whole imageintensitiesof film
3. Explore the color of Bit Depth with Look Up Table (LUT).
4. Explore other techniques like rotoscoping and keying methods to enhance the color gradingin films.
5. Understanding the complete methodology of post-production and color grading process.

COURSE 21: FILM COLOR GRADING

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Color temperature and white balance

- Color grading styles and aesthetics

- Exploring primary and secondary color correction techniques

- Working with histograms, waveforms, and vector scopes

- Correcting skin tones and other common color issues

  9 References:

  a. Steve Hullfish,"The Art and Technique of Digital Color Correction",FocalPress,SecondEdition, 2012
  b. Alexis Van Hurkman; "Color Correction",Peachpit Press; First Edition,2013

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Film Screening and Analysis

3. Practical Color Grading Workshops

4. Guest Lectures and Industry Experts

5. Film Festival Participation

COURSE 22: AUDIO EDITING

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

   6. Proficiency in Audio Editing Software

   7. Learn essential techniques for editing audio files

   8. Acquire knowledge and skills related to audio mixing and mastering processes

   9. skills and knowledge to create a portfolio of audio editing projects that demonstrate proficiency and creativity

2. Syllabus:

UNIT – I

Physiology of sound, Audible sound spectrum, Creative use of sound, Aesthetic applications, Recognizing realistic sound for artistic fulfillment, Discussion on soundtracks in different films.

UNIT – II

Different methods of recording sound: Recording sound in controlled situation, Playback, Prerecording, Dubbing, Post synchronization, Voice recording, Microphones for location recording, Microphone for studio recordings

UNIT - III

Sound design for animation, Historical voice talent in animation, Casting voice talent, Working with voiceactors, Recording dialog, Synchronization, The role of music in animation, Functions of SFX in animation, Discussion on soundtracks in different animation films.

UNIT - IV

Basic audio editing techniques and concepts, Conversion of files from one format to another, mono tostereo conversions, Audio special effects, Audio plug-ins.

UNIT - V

Introduction to digital audio workstation: Midi and digital sound, Basic mixing techniques, Introduction to mastering, Delivery formats.

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

   1. Analysis on soundtracks in different films

   2. Develop different methods of recording sound

   3. Create sound design for animation

   4. Analysis basic audio editing techniques and concepts

   5. Analysis digital audio workstation

COURSE 22: AUDIO EDITING

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Introduction to Adobe Premiere
- Basic Editing Techniques
- Applying Transitions and Effects
- Color Correction and Grading
- Text and Graphics
- Advanced Editing Techniques
- Exporting and Delivery

10 References:

a. Practical recording Techniques: Bartlett, Bruce and Jenny Bartlett
b. Audio and Video Systems: R. G. Gupta
c. Acoustics: Mackenzie

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.
2. Invite professionals from the audio editing industry to share their experiences
3. Workshops and Demonstrations
4. Assign group projects that require students to collaborate on audio editing assignments

COURSE 22: VISUAL EFFECTS

Theory   Credits: 3   3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

1. Understanding of VFX Principles

2. Proficiency in industry-standard software and tools used in visual effects production

3. Visual effects challenges and find creative solutions to achieve the desired effects

4. Learn how to meet deadlines and deliver high-quality work within given constraints.

2. Syllabus:

UNIT – I

Introduction to Visual effects, Difference between visual effects and special effects,Chroma key compositing - Principles of chroma key compositing, Pulling the matte using keyer. Despill operation to avoid spill contamination (hue operation), Garbage mattes to support keying, Colour correction and composite the foreground and background, Chroma shoot, Materials used for chroma screen, Lighting techniques for chromashoot, Shooting the chroma. Advantages of video cameras with little compression (4:2:2,4:4:4) for chroma shoots, motion tracking in chroma screen for camera movements

UNIT – II

Color correction and color grading: Primary and secondary color correction, Correcting and matching shots,Basiccolor grading, Colour balancing of elements, Vignettes

UNIT - III

Rotoscoping - Uses and advantages of rotoscoping, Creating rotos with splines, Hierarchical parent and childroto shapes, Interpolation technique, Keyframerotos, Final inspection, Rotoscope motion blur andsemi transparency

UNIT - IV

Tracking: Motion tracking, Motion stabilization, Mocha tracking, Camera tracking in After Effects, Setextensions, Problems faced during tracking, Time-stretching, time-remapping and time warp effects

UNIT - V

How to approach and plan a VFX shot? Other VFX applications - Morphing, Adding atmospheres, Crowdreplication, Basics of stereo compositing. What is a Vfx breakdown?

3. SKILL OUTCOMES: Students after successful completion of this course will be able to:

5. Create motion tracking in chroma screen for camera movements
6. Develop color correction and color grading
7. Analysis advantages of rotoscoping
8. Analysis problems faced during tracking
9. Create a Vfx breakdown

COURSE 22: VISUAL EFFECTS

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Basics of Match moving – 2D tracking process

- Pre multiplied and non pre multiplied alpha compositing

- Multipass: Specular pass, Diffuse pass, Occlusion pass, Shadow pass, Reflection pass, Composite different passes

- Image blend modes and color correction techniques

- High Dynamic Range Imagery (HDRI) for photorealistic lighting and reflection mapping

- Import 3D objects from 3D softwares

- Composite 2D elements and 3D elements in 3D composite

  ### 11 References:

  a. Compositing Visual Effects: Steve Wright
  b. Digital Compositing for Film and Video: Focal Press
  c. Match moving: The Invisible Art of Camera Tracking: Tim Dobbert
  d. Maya Professional Tips and Techniques: Lee Lanier

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Workshops and Masterclasses

3. Film Screening and Analysis

4. Industry Visits and Internships

COURSE 23: MOTION GRAPHICS

Theory   Credits: 3   3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

1. Understanding of Motion Graphics

Principles 2. Proficiency in Motion

Graphics Software

3. Design and Animation Skills

4. Technical Knowledge and Problem-Solving

5. Professional Portfolio Development

2. Syllabus:

UNIT – I

Intro to Compositing tools - Compositing Pipeline- Orientation/Basics - Compositing Essentials - Intro 3D Matte painting- image processing techniques

UNIT – II

Rotoscoping – Marker Removal (Green Screen) – Logo Replacement (3D) – Rod Removal – Screen Burn-ins – Full Body Rotoscoping – Hair Removal- Muzzle Fire – Invisible Effects – Articulate Roto – Reflection Paint-out – Marker Removal – Rig Removal – Ethereal Effects (Ghost)

UNIT - III

3D cameras - 3D Compositing techniques - Digital matte painting critique - motion tracking camera - Camera & Planar tracking - using movement to control scene changes - Using Depth of Field in 3D Camera - Motion Track & Composite 3d Models Into Live Action Footage - stabilizing the footage.

UNIT - IV

2D tracking - 3D calibration - automatic tracking - interactive tracking - camera setting formatchmoving - setfitting - matchamation - tracking mattes - refining real time

UNIT - V

Intro to rendering Tolls - Final gathering of all items - rendering Formats for 2D and 3d - Animating Maps -Working on Audio - Rendering Techniques- Render queue, Advanced rendering, Pre renderingand proxies

3. **SKILL OUTCOMES:** Students after successful completion of this course will be able to:

1. Understand Concept in Compositing and VFX
2. Get well versed knowledge in Rotoscopy
3. Understanding on Camera tracking and its usage
4. Understanding on match Moving Techniques
5. Knowledge of Final Gathering and get final Rendered Output

COURSE 23: MOTION GRAPHICS

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Introduction to industry-standard software (e.g., Adobe After Effects, Cinema 4D)

- Creating smooth and dynamic animations using keyframes

- Understanding typographic principles for motion graphics

- Designing visually appealing and engaging text compositions

- Exploring shape layer properties and techniques

- Creating seamless transitions and compositing multiple elements

- Integrating 3D elements into 2D compositions

- Presenting and sharing the final motion graphics project

12 References:

a. Block, Bruce. The Visual Story. Focal Press
b. Katz, Steven. Film Directing Shot by Shot. Michael Wiese Productions
c. Maschwitz, S. The DV Rebel's Guide. Peachpit Press

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Workshops and Guest Lectures

3. Organize portfolio review sessions where students can showcase their work

4. Assign group projects that require students to collaborate and work together on motion graphics assignments

COURSE 23: CAMERA TRACKING

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

    1. Understanding of Camera Tracking

    Concepts 2. Proficiency in Camera

    Tracking Software

    3. Ability to Capture High-Quality

    Tracking Data 4. Troubleshooting and

    Workflow Optimization

    5. Practical Application of Camera Tracking

2. Syllabus:

UNIT – I

What is tracking movement? what are the fundamental steps off cameratracking? what are the different kinds of motion tracking? how to lock an image to another moving image? why was the technique developed? how did the process of tracking start? the 3d tracking tools that became a milestone for the artof tracking.

UNIT – II

How to use the pointtracker? what is single point tracking? what are thedifferent types point trackers and how they work? when to use 3d tracking? how does the tool work? how does it processthe footage? why is it one of the best option in after effects?

UNIT - III

How to extract the camera motion from the footage? how to use the track panel? how to attach content intoa scene containing a solved camera? creating track points to use the attach point.

UNIT - IV

What is meant by tricky screenreplacements? advanced screen replacement in after effects. how does screenreplacement work in mocha? how does the 3d tracker work? how to add elements to a 3d track? how to resize or move the target to attach content to different location?

UNIT - V

How to track elements to background and lighting? how to tweak the materials? how to create text and trackto the motion picture? whatis multi-pass rendering? what is pre-rendering and compositing? and how to conduct advanced tracking on it. Understanding after effects basics and how does the advance tracking workonit. how to export to after effects? How to adjust in after effects?

3. **SKILL OUTCOMES:** Students after successful completion of this course will be able to:

5. Understanding of Camera Tracking Fundamentals
6. Proficiency in Camera Tracking Software
7. Workflow for Camera Tracking
8. Troubleshooting and Problem Solving
9. Creative Application of Camera Tracking

COURSE 23: CAMERA TRACKING

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Using pin tracking attach the points.

- Using any software attach the model to the footage.

- Analyze the given footage and extract the cameramotion.

- Submit demo reel on camera track

13 References:

     a. Match moving: the invisible art of camera tracking by tim dobbert
     b. Real time camera tracking for augmented reality application by harold wuest
     c. Video tracking: theory and practice by emilio maggio and andrea cavallaro

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Organize a workshop where students can learn the basics of camera tracking

3. Assign camera tracking projects to students

4. Invite professionals or experts in the field of camera tracking

COURSE 24: CINEMATOGRAPHY

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

   1. Understanding of Camera
   Equipment2. Composition and
   Framing

   3. Visual Storytelling

   4. Technical Proficiency

   5. Professional Ethics and Practices

2. **Syllabus:**

UNIT – I

What is the role of a cinematographer? history of cinematography. what arethe basic principles of cinematography? what are the elements of cinematography? what are theabilities and skills a cinematographer should have? what are the different types of motion picture camera? the camera techniquesand operations used in cinematography. what is meant by theterms analogue and digital? what is the importance composition, filing the frame and point of view?

UNIT – II

What is composition with and compositional balance? what is meant by rule of thirds and 180 degree rule?what is a shot? what are the types ofshots and what are their uses? understanding some basic camera angles. how properly conveyed motion can bring alive a scene. what are the concepts offraming? the important terminologies of the film shooting process.

UNIT - III

What is theimportance of visual story-telling in cinematography? how is it usedto create different aesthetic effects? what is meant by academy ratio and wide screen ratio? what is anamorphic process? how to identifybasic camera moves? what are the different types of camera movements? what is steadicam and static camera? what is panning and zooming shot? what is the use and advantage of tracks and trolley? what is crane shot and when to use?what is tracking shot? what are its advantages and disadvantages?

UNIT - IV

The basic technical knowledge about the usage of the lenses. what are the different types of lenses? what is the use of filters? theimportance of selecting proper lenses. what is meant by twin lensreflex and single lens reflex? what are the core concepts of exposure? what is manual exposure? understanding the triangle of exposure. what is depth of field and what are the different types of focuses?the factors that determinethe depth of field? what is hyper focal distance? what is exposure metering?

UNIT - V

The quality of lighting required for a shot. what is the direction of the lighting? how to control the lightingin order to get desired result? what is inverse square law of lights? what is meant by conventional, soft, diffused, bounce, hard or creative lighting? the difference between indoor/outdoor and day effect/ night effect? what arethe different kinds of lights? how to control light intensity? how to create emotional impact using light? what is a reflector and what is its role?

3. **SKILL OUTCOMES:** Students after successful completion of this course will be able to:

5. Learn how to effectively use various camera equipment and accessories to capture high-quality visuals.

6. understand the importance of visual elements in enhancing the overall story and creating a compellingcinematic experience

7. lighting setups, and overall aesthetics to create a distinct visual language for projects

8. Finding creative solutions to achieve the desired visual outcomes

9. Working on practical projects and build a portfolio of your cinematography work

COURSE 24: CINEMATOGRAPHY

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Take at least 5 shots that convey a visual story.

- Analyze the given video clips

- take 7 shots that describes the whole theme

- Convey a story though a short video.

  14 References:

  a. filming the fantastic: a guide to visual effects cinematography by mark sawicki
  b. Cinematography theory and practice: image making for cinematography by blain brown
  c. Reflections: twenty-one cinematographers at work by Benjamin Berger

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Film Screenings and Analysis

3. Conduct practical workshops where students work alongside their teachers to learn various cinematography techniques

COURSE 24: ADVANCED COMPOSITING

Theory   Credits: 3   3 hrs/week

1. Learning Outcomes: Students after successful completion of this course will be able to:

1. Understanding the Nuke Interface

2. Manipulate and enhance images using various tools and nodes in

Nuke3. Compositing Fundamentals

4. Advanced Node-based Compositing

5. Build a strong portfolio of compositing work that showcases a range of skills and techniques

2. Syllabus:

UNIT – I

Getting started with nuke. what are the different components of the graphic user interface? understandingthe use of nodes, the viewer, framecycler. introducing nuke's keying nodes.how to use huekeyer? what is image based keyer? what is the role of keylight in animation? combining keyer nodes using the tree. how touse the project settings panel? how to set up a high-resolutionstereo script? compositing a stereo project. how to render and view stereo trees?

UNIT – II

How to setup 3d scene? movingimages with a 3d scene. what is reconcile 3d?how to transform 3d data into 2d data? how to calculate reflection movement using camera tracking?how does 3d tracking work in nuke? loading a pre- generated cameratracker node. how to aligning the scenes? howto create the reflection? building a camera projectionscene. how to tweak the geometry? how to animatethe camera? what is meant by tweaking the texture? Using a spherical transform to replace sky. compositing outside the scan line render node**.**

UNIT - III

What are the safety areas? how to build the gizmo's tree? how to create a user knobs?how to scripte with a little tcl? how to test the gizmo' tree‑ wrapping in groups? manipulating the nuke script in atext editor. howto turn a group into a gizmo? how to use the viewer input process? what are the basics of python scripting?how to create a button with python?how to add a hot key?how to make customization stick with menu?

UNIT - IV

How towork with process trees? how to create a simple process tree? how to merge images? inserting and manipulating nodes inthe tree. how to changing properties and render them? what is meant by delving deeper into the merge node? creating animation with keyframes working with channels. how to work with contact sheets?using the bounding box to speed up processing. how to use linking properties with expressions? slapping things together and working on foreground over background.

UNIT - V

How towork with process trees? how to create a simple process tree? how to merge images? inserting andmanipulating nodes inthe tree. how to changing properties and render them? what is meant by delving deeper into the merge node? creating animation with keyframes introducingrotopaint's interface.what is meant by the term curve editor? what issplit-screening and how to twin it with roto? how to combine paint? how to use roto in animation? what is the use the dope sheet?

3. **SKILL OUTCOMES:** Students after successful completion of this course will be able to:

4. learn the various tools, features, and workflows within Nuke and how to navigate its interfaceeffectively

5. Rotoscoping skills will be developed to manually create precise mattes for objects and characters

6. adjust tonal values, and enhance the overall look of your composites using various color grading andcorrection techniques

7. integrating 3D elements into live-action footage or creating realistic camera movements

8. organizing your node tree, utilizing channels and passes effectively, and optimizing render times

COURSE 24: ADVANCED COMPOSITING

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Create a simple compositing.

- Multi layer compositing – minimum 200 frames.

- Work on real film footages.

  15 References:

  a. Nuke 101: professional compositing and visual effects by ron ganbar
  b. Digital compositing with nuke by lee lanier
  c. The art and science of digital compositing by ron brinkman

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Workshops and Demonstrations

3. Field Trips or Studio Visits

4. Collaborate with industry partners to provide students with opportunities to work on real-world compositing projects

COURSE 25: GREEN SCREEN SHOOTING

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

   1. Understanding Green Screen
   Technology2. Equipment and Setup
   3. Troubleshooting and Problem-
   solving4. Creative Applications
   5. Collaboration and Communication Skills

2. **Syllabus:**

UNIT – I

what is seamlessvfx? why is it essential to plan the shoot according to visual effect shots? how to plan cost effective shoot? what is pre-visualization? what is chroma range? what is colour separation overlay? the usageand types of green screen. what is gaffer tape and where is it used? what is travelling matte techniqueor optical printing? the experimentation of background colours. when was green or blue screen first used? what cgi? what is bayer pattern?

UNIT – II

the consideration of colours of the elements while shooting on green screen. what colours should be avoided? when do you intentionally use the same coloured elements? why the selection of green screen paint important? how to build and paint a green screen? the requirement of colour sampling. how to lightgreen screen properly? why is it important to match lighting? how to match lighting and shadows of the fore- ground and background? how to cast or extract shadow?

UNIT - III

how to match lighting for outdoor shoots? what is light scattering?what is meant by light spill? why the directions of light should match? why should camera be 'lockedoff' in a position? the importance camera matching and how it should be taken care off. what is camera mapping? matching the depth of field trackersand markers. how does tracker work? what is 2d tracking? how to place tracking markers? what is planer tracking and matte tracking? how to place body and facial trackers?

UNIT - IV

what is alpha channel? what is the purpose of rotoscoping in vfx? what are thetools required to begin rotoscoping? how to shoot for match moving?what is inverse match moving? why is essential to matchdirection. quality and ratio?

UNIT - V

what is motion capturing? what is in-shot motion capture? what is motion capture primer? how to create virtual props? how to remove objects? howto create photo-real animals, creatures, digital crowd, fire, water?what is crowd replication what is node-based compositing? what is compositing primer? what is warpingand where is it used? what is garbage matting? what is compositing without matte

3. **SKILL OUTCOMES:** Students after successful completion of this course will be able to:

5. Understanding Green Screen Basics

6. how to properly set up the equipment to achieve the best results

7. understand the importance of shooting at the appropriate angle and distance from the green screen to achieve seamless compositing

8. Adjust color grading, apply visual effects, and integrate the subject seamlessly into new backgrounds

9. Gain insights into the overall workflow of a green screen project

COURSE 25: GREEN SCREEN SHOOTING

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- eliminate the green screen from the given footage

- give proper lighting in the given footage

- Conduct a chroma shoot. (a) plain chroma shoot (b) withtracker marker and (c) with half sets and props

16 References:

1. the green screen handbook: real-world production techniques by Jeff foster
2. greenscreen made easy:keying and compositing techniques for indie filmakers byjeremy hanke
   &michele yamazaki

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.

2. Organize a scriptwriting competition where students create original scripts for green screen shooting

3. Host a green screen film festival where students can showcase their final projects or short films createdduring the course

4. Invite industry professionals or experts in green screen shooting to give guest lectures or workshops

COURSE 25: MATCHMOVING TECHNIQUES

Theory   Credits: 3   3 hrs/week

1. **Learning Outcomes:** Students after successful completion of this course will be able to:

   1. Understanding Green Screen

   Technology2. Equipment and Setup

   3. Troubleshooting and Problem-

   solving4. Creative Applications

   5. Collaboration and Communication Skills

2. **Syllabus:**

UNIT – I

Understanding the importance of Matchmoving for integrating CG elements into live action footage. The movement ensures the angles of 3D rendered output are the same angles of the live footage. Basic application with matchmoving capabilities. Basics of tracking algorithm,basics of motion tracking algorithm.

UNIT – II

Matchmoving is related with motion tracking or camera solving ,rotoscoping and photogrammetry.template matching ,basics of 2D & 3D camera tracking, ground plane determination. Reconstruction. Tracking mattes.Study and making of live footage.

UNIT - III

Hard body physics, Basic of Camera animation, Matte tracking, Body tracking, Face tracking, Raytracing, Basicmotion capture, Green matte painting, Basic of motion capturing. Basic features ofplacing tracking points based on the footage.

UNIT - IV

To discover 2D tracking and how to make every track count, Work step by step through each stagecalibration.Understand how real cameras work. Explore the match mover's role on a live action set. To learn the matchamation,match your CG character or object liveaction plate . Learning basiccomposting.

UNIT - V

Learning to track the motion of an object seen in the footage. Apply matchmove data for painting,compositing and lighting. Examine how 3D movies affect match moving. Learn how 3D/stereo movies are made and how itaffects matchmovers , advanced matchmoving capabilities and algorithm

3. **SKILL OUTCOMES:** Students after successful completion of this course will be able to:

5. Understanding the importance of Matchmoving for integrating CG elements into live actionfootage

6. Matchmoving is related with motion tracking or camera solving, rotoscoping and photogrammetry

7. Basic Camera animation, Matte tracking, Body tracking, Face tracking

8. Compositing and lighting process helps them to know what is really going on in footage

9. how visual effects and compositing process is done in production

COURSE 25: MATCHMOVING TECHNIQUES

Practical   Credits: 1   2 hrs/week

4. Practical Syllabus:

- Understanding the role of a matchmover in the production pipeline
- Camera and Tracking Basics
- Geometry and Calibration
- Advanced Tracking Techniques
- Integration and Matchmoving Workflow

17 References:

1. Tim Dobbert, "Matchmaking: The Invisible art of Camera Tracking", John Wiley & Sons, Second Edition
2. Erica Hornung, "The Art and Technique of Matchmoving: Solutions for the VFX Artist", Taylor & Francis

6. Co-Curricular Activities:

1. Seminars, Group Discussions, Quizzes and Debates etc.
2. Conducting Practical Matchmoving Workshops
3. Assign students matchmoving projects that require them to track and integrate computer-generatedelements into live-action footage
4. Guest Lectures and Industry Visits