



ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

MINOR

Subject: Multimedia

w.e.f. AY 2023-24

COURSE STRUCTURE

Year	Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
	II	1	Graphic Design	3	3
			Graphic Design Lab	2	1
II	III	2	Introduction to 3D	3	3
			Introduction to 3D Lab	2	1
	IV	3	Fundamentals of Filmmaking	3	3
			Fundamentals of Filmmaking Lab	2	1
		4	Nuendo	3	3
			Nuendo Lab	2	1
III	V	5	Story Board Design	3	3
			Story Board Design Lab	2	1
		6	Character Animation	3	3
			Character Animation Lab	2	1

SEMESTER-II
COURSE 1: 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, introduction to Graphic 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 program window-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, filling a 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, titles, 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

SEMESTER-II
COURSE 1: 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

SEMESTER-III
COURSE 2: 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 techniques including 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 softshadows 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

SEMESTER-III
COURSE 2: 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

SEMESTER-IV

COURSE 3: 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 role of 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 prepared with 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 the daily schedule; finalizing the schedule; production process, introduction to location design, finding location; securing a location community relations; film commissions ; 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

SEMESTER-IV

COURSE 3: 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) by Steven ascher and Edward pincus
2. Directing: film techniques & aesthetics (fifth edition, 2013) by Michael rabinger and Mickhurbis-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

SEMESTER-IV
COURSE 4: 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

SEMESTER-IV
COURSE 4: 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 a wide 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

SEMESTER-V
COURSE 5: 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 color theory 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 Shades etc.

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 visual aesthetics and readability
4. Production Process

SEMESTER-V
COURSE 5: 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" by Nancy 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

SEMESTER-V
COURSE 6: 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 1-Blocking, 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-Pose Action (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 REFERENCES 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

SEMESTER-V
COURSE 6: 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"**
by Giuseppe 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