

# STATE EDUCATION POLICY - 2025 (SEP-2025)

**Curriculum Structures for** 

# **Bachelor of Science**

**Animation and Visual Effects Degree Programme** 

Syllabus for III and IV Semesters and Open Elective Courses in Animation and Visual Effects

Board of Studies in Animation and Visual Effects Mangalore University Konaje

# MANGALORE UNIVERSITY

# Suggested programme structure for the Under Graduate Programme

[BSc. Food Nutrition & Dietetics, Food Technology, Interior Design & Decoration, Animation &Visual Effect, Home Science]

# **Programme Structure**

Semester	Major 1	Major 2	Major 3	Elective / Optional	Language (English + Hindi/French)	Compulsory	Total Credit	Total work hour
Ι	5 (3T+2P)	5 (3T+2P)	5 (3T+2P)		3+3	2	23	4+4+4+4+4+4+4+2=34
II	5 (3T+2P)	5 (3T+2P)	5 (3T+2P)		3+3	2	23	4+4+4+4+4+4+4+2=34
III	5 (3T+2P)	5 (3T+2P)	5 (3T+2P)	2	3+3		23	4+4+4+4+4+2+4+4=34
IV	5 (3T+2P)	5 (3T+2P)	5 (3T+2P)	2	3+3	2	25	4+4+4+4+4+2+4+4+2=36
V	8[(2x3T)+2P]	8[(2x3T)+2P]	8[(2x3T)+2P]			2	26	4+4+4+4+4+4+4+4+2=38
VI	8[(2x3T)+2P]	8[(2x3T)+2P]	8[(2x3T)+2P]			2	26	4+4+4+4+4+4+4+4+2=38
							146	214

Semester III								
SN	Course Code	Course Name	Category of Course	Teaching Hours per week	SEE	IA	Total Ma rks	Credits
1		3D Modelling	Theory	4	80	20	100	3
2		Rigging & Animation	Practical	4	40	10	50	2
3		Aesthetics of Video Editing	Theory	4	80	20	100	3
4		3D modeling Lab	Practical	4	40	10	50	2
5		Rigging & Animation Lab	Theory	4	80	20	100	3
6		Video Editing Lab	Practical	4	40	10	50	2
7		User Interface Design	Theory	2	40	10	50	2
			Semeste	er IV				
	r							
SN	Cours e Code	Course Name	Category of Course	Teaching Hours per week	SEE	IA	Total Mar ks	Credits
<b>SN</b>	Cours e Code	<b>Course Name</b> Audio Production	Category of Course Theory	Teaching Hours per week 4	<b>SEE</b> 80	<b>IA</b> 20	Total Mar ks 100	<b>Credits</b>
<b>SN</b> 1 2	Cours e Code	Course Name Audio Production Surfacing & Lighting	Category of Course Theory Practical	TeachingHoursper week44	<b>SEE</b> 80 40	<b>IA</b> 20 10	Total Mar ks 100 50	Credits 3 2
<b>SN</b> 1 2 3	Cours e Code	Course Name Audio Production Surfacing & Lighting Introduction To Blender	Category of Course Theory Practical Theory	TeachingHoursper week444	<b>SEE</b> 80 40 80	<b>IA</b> 20 10 20	Total           Mar           ks           100           50           100	Credits 3 2 3
<b>SN</b> 1 2 3 4	Cours e Code	Course Name Audio Production Surfacing & Lighting Introduction To Blender Audio Production Lab	Category of Course Theory Practical Theory Practical	Teaching Hours per week444444	SEE         80         40         80         40         80         40	IA       20       10       20       10	Total           Mar           ks           100           50           100           50	Credits           3           2           3           2           3           2
<b>SN</b> 1 2 3 4 5	Cours e Code	Course Name Audio Production Surfacing & Lighting Introduction To Blender Audio Production Lab Surface Lighting Lab	Category of Course Theory Practical Theory Practical Theory	Teaching Hours per week44444444	SEE         80         40         80         40         80         40         80	IA 20 10 20 10 20	Total           Mar           ks           100           50           100           50           100           50	Credits         3         2         3         2         3         2         3         2         3         2         3         3         2         3         3
<b>SN</b> 1 2 3 4 5 6	Cours e Code	Course Name Audio Production Surfacing & Lighting Introduction To Blender Audio Production Lab Surface Lighting Lab Fundamental Blender Lab	Category of Course Theory Practical Theory Practical Theory Practical	Teaching Hours per week44444444444	SEE         80         40         80         40         80         40         40         40	IA         20         10         20         10         20         10         20         10         20         10         20         10         20         10	Total           Mar           ks           100           50           100           50           100           50           50           50           50           50	Credits         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2
<b>SN</b> 1 2 3 4 5 6 7	Cours e Code	Course Name Audio Production Surfacing & Lighting Introduction To Blender Audio Production Lab Surface Lighting Lab Fundamental Blender Lab Film Direction	Category of Course Theory Practical Theory Practical Theory Practical Theory	Teaching         Hours         per week         4         4         4         4         4         4         4         2	SEE         80         40         80         40         80         40         40         40         40         40         40	IA         20         10         20         10         20         10         20         10         10         10         10         10         10         10         10         10         10         10	Total         Mar         ks         100         50         100         50         100         50         50         50         50         50         50         50         50         50         50         50	Credits         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2         3         2         2         2         2         2         2         2         2         2

# **BSc** – Animation and Visual Effects

	Semester I				
SN	Course Code	Course Name	Credits		
1	DSC-1	Fundamentals of Drawing	3		
2	DSC-2	Traditional and Stop Motion Animation	3		
3	DSC-3	Basics of Graphic Design	3		
4	DSP-1	Fundamental of Art lab	2		
5	DSP-2	Traditional and Stop motion Animation lab	2		
6	DSP-3	Raster graphic lab (Photoshop)	2		
7		Language 1	3		
8		Language 2	3		
9		Compulsory 1	2		

# **BSc – Animation and Visual Effects**

	Semester II			
SN	Course Code	Course Name	Credits	
1	DSC-4	Storyboard and Advanced Drawing	3	
2	DSC-5	2D Digital Animation	3	
3	DSC-6	Advances in Graphic Design	3	
4	DSP-4	Storyboard and Advance drawing Lab	2	
5	DSP-5	2D Digital Animation Lab	2	
6	DSP-6	Vector Graphics Lab	2	
7		Language 1	3	
8		Language 2	3	
9		Compulsory 2	2	

Semester III			
SN	<b>Course Code</b>	Course Name	Credits
1	DSC-7	3D Modelling	3
2	DSC-8	Rigging & Animation	3
3	DSC-9	Aesthetics of Video Editing	3
4	DSP-7	3D Modeling Lab	2
5	DSP-8	Rigging & Animation Lab	2
6	DSP-9	Video Editing Lab	2
7	DSE-1	User Interface Design	2
7		Language 1	3
8		Language 2	3

Semester IV			
SN	<b>Course Code</b>	Course Name	Credits
1	DSC-10	Audio Production	3
2	DSC-11	Surfacing & Lighting	3
3	DSC-12	Introduction To Blender	3
4	DSP-10	Audio Production Lab	2
5	DSP-11	Surface Lighting Lab	2
6	DSP-12	Fundamental Blender Lab	2
7	DSE-2	Film Direction	2
9		Language 1	3
10		Language 2	3
11	Compulsory 3	Web design	2

	Semester V			
SN	<b>Course Code</b>	Course Name	Credits	
1	DSC-13	Video Compositing	3	
2	DSC-14	Dynamics	3	
3	DSC-15	Motion Graphics Design	3	
4	DSC-16	Ad Film Making	3	
5	DSC-17	Digital Compositing	3	
6	DSC-18	Advanced CGI I	3	
9	DSP-13	Video compositing Lab	2	
10	DSP-14	Dynamics Lab	2	
11	DSP-15	Motion graphics Lab	2	
12	Compulsory 4	Virtual Reality	2	

Semester VI			
SN	<b>Course Code</b>	Course Name	Credits
1	DSC-19	Advanced Character Animation	3
2	DSC-20	Psychology of Animation	3
3	DSC-21	Introduction to Zbrush	3
4	DSC-22	The Future of Animation and VFX	3
5	DSC-23	The Business of Animation and VFX	3
6	DSC-24	Animation & VFX in Gaming	3
7	DSP-16	3D Character Animation Lab	2
8	DSP-17	Motion Graphic in 3D Lab	2
9	DSP-18	Zbrush Fundamentals Lab	2
10	Compulsory 5	Animation Short Film Project (Mini Project)	2

# **SEMESTER III**

# **BSc** – Animation and Visual Effects

# Semester III

Semester m			
Course Code: DSC-7	Course Name: 3D Modeling		
Course Credits: 3	Hours of Teaching/Week: 4		
Total Contact Hours: 52	Formative Assessment Marks: 20		
Exam Marks: 80	Exam Duration: 3 Hours		

## **Objective:**

- Master Core Geometric Representations for Maya Workflows
- Comprehend Algorithmic Foundations of Maya's Modeling Operations:
- Develop Analytical Skills for Maya-Centric Workflow Optimization:

# **Course Outcome:**

- Critically Analyze and Select Geometric Representations for Maya
- Explain and Evaluate Maya's Underlying 3D Modeling Algorithms.
- Propose Maya-Optimized Solutions for Complex Geometric Problems.
- Discuss and Evaluate Trends in 3D Modeling Theory and Maya's Future

Content	
Unit - 1	
Introduction to 3D, Understanding X, Y, Z axes (World vs. Object Space), Basic 3D	
terminology: Mesh, Vertices, Edges, Faces (Polygons). Types of 3D models: Hard surface	13
vs. Organic. Introduction to the 3D production pipeline (overview: concept, modeling,	
texturing, rigging, animation, rendering).	
<b>Unit</b> – 2	
Overview of the Maya UI: Menus, Shelves, Panels, Viewports, Navigating the 3D	
viewport (orbit, pan, zoom). Understanding the Channel Box, Attribute Editor, Tool	13
Settings., File management in Maya: Projects, saving, importing, exporting.	
Understanding standard 3D primitives (cube, sphere, cylinder, plane, torus), Introduction	
to selection modes: Object mode vs. Component modes (Vertex, Edge, Face).	
Unit – 3	
The core concept of building models using polygons, Advantages, and disadvantages of	
polygonal modelling, Understanding reference images and blueprints in modelling,	13
Symmetry modeling concepts. Introduction to subdivision surfaces, Understanding the	
concept of modeling history and its impact, Differences between NURBS and polygonal	
modeling.	
<b>Unit</b> – 4	
What are UVs? The concept of unwrapping a 3D model onto a 2D plane, Common UV	
projection types (Planar, Cylindrical, Spherical, Automatic). Types of texture maps	13
(Color/Albedo, Normal, Displacement, Roughness, Metallic, Specular). What is	
rendering? The process of generating a 2D image from a 3D scene	

## **Reference Books:**

- 1. "Introducing Autodesk Maya" by Dariush Derakhshani (Latest Edition) A widely recognized introductory text for Maya.
- 2. "**Digital Modeling**" by William Vaughan Covers fundamental modeling concepts applicable across various software.
- 3. **"The Art of Digital Sculpting"** by Pascal Raimbault Focuses on the artistic and technical aspects of digital sculpting.
- 4. "Digital Texturing and Painting" by Owen Demers Provides insights into texture creation and application.
- 5. **"Understanding 3D Animation"** by Ann Geibel and David Isen Offers a broader context of the 3D pipeline, including modeling.

Course Code: DSP-7 Lab	Paper Title: 3D Modeling Lab
Course Credits: 2	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 10
Exam Marks: 40	Exam Duration: 3 Hours

The following activities are to be carried out in the lab during the semester:

- 1. Modeling a Simple Table and Chair:
- 2. Creating a Coffee Mug:
- 3. Modeling a Low-Poly Tree
- 4. Building a Basic House with Windows and Doors:
- 5. Designing a Simple Crate/Box:
- 6. Modeling a Cartoonish Rock/Boulder
- 7. Creating a Simple Book:
- 8. Modeling a Basic Game Prop (e.g., a Barrel)
- 9. Using Maya's Deformers (e.g., creating a bent pipe
- 10. Recreating a Simple Everyday Object from Reference (e.g., a remote control)
- 11. Introduction to UV Mapping for a Cube/Cylinder
- 12. Creation of fish Aquarium elements

Course Code: DSC-8	Course Name: Rigging & Animation
Course Credits: 3	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 20
Exam Marks: 80	Exam Duration: 3 Hours

## **Objective:**

- Master the Theoretical Foundations of Character Kinematics and Deformation in Maya
- Comprehend the Algorithmic and Perceptual Basis of Animation Principles in Maya
- Develop an Understanding of Animation Data Representation and Interpolation in Maya

#### **Course Outcome:**

- Analyze and Predict Kinematic Behavior and Deformation in Maya Rigs timing, and spacing
- Explain and Evaluate the Application of Animation Principles using Maya's Tools
- Interpret and Optimize Animation Data Structures within Maya
- Differentiate and Justify Maya Character Rigging Architectures

Content	Hr	
Unit - 1		
Introduction to Rigging. Understanding Character Movements and Kinematics. Types Of		
Rigging. Predicting the Needs of a Character Rig based on Story Necessity. Planning Joint		
Arrangement for Pure FK, IK, Spline IK, Dynamic Musculature, and other Specialized		
Character Needs. Rigging In 2D Digital Animation and 3D Animation.		
Unit – 2		
Principles of Animation: Squash and Stretch, Anticipation, Staging, Straight Ahead and		
Pose to Pose, Follow Through and Overlapping Action, Slow In and Slow Out, Arc	13	

### Unit – 3

Secondary Action, Timing, Exaggeration, Solid Drawing, Appeal. Posing In Animation.

Nonlinear Animation: Introduction to Nonlinear Animation and Understanding Trax editorand Creating Poses and working with Poses - Creating Clips and working with Clips andModifying Clips ñ Blending clips.

#### Unit - 4

Line of Action. Application of I, C and S curve in animation. Static and Dynamic poses.
Blocking in animation. Application of key pose. Extreme, Breakdowns and in-betweens.
Application of timing in animation. Application of gestures in animation. Expressions in animation. Lip sync.

#### **Reference books:**

1. Dariush Derakhshani, Introducing Maya 2017, Sybex, 2016.

2. Richard Williams, Animation Survival Kit, Revised edition, 2009.

Course Code: DSP-8 Lab	Paper Title: Rigging & Animation Lab
Course Credits: 2	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 10
Exam Marks: 40	Exam Duration: 3 Hours

The following activities are to be carried out in the lab during the semester:

#### Rigging

- i. Use of Set Driven Key
- ii. Parenting and Grouping.
- iii. Constraints. Deformers.
- iv. Concept of IK and FK
- v. Designing of joints for biped characters
- vi. Application of Global control
- vii. Prop and mechanical rigging
- viii. character rigging
- ix. Function of skinning
- x. Paint weight

#### Animation

- i. Keyframe Animation
- ii. The Graph Editor
- iii. Motion Path animation
- iv. Use of Animation Layers
- v. Create Poses for Animation
- vi. Walk Cycle animation (Two Legged)
- vii. Run Cycle animation (Two Legged)
- viii. Character Animation
  - ix. Self-Enactment for animation

### **References:**

1. Carlo Sansonetti, Character rigging: The Puppet Rig Maya Rigging Techniques, 2007

2. Richard Williams, Animation Survival Kit, Revised edition 2009.

Course Code: DSC-12	Course Name:	
	Aesthetics of Video Editing	
Course Credits: 3	Hours of Teaching/Week: 4	
Total Contact Hours: 52	Formative Assessment Marks: 20	
Exam Marks: 80	Exam Duration: 3 Hours	
Objective:		
<ul> <li>Understand Foundational Principles of Cinematic Language and Narrative Structure</li> <li>Comprehend the Theoretical Basis of Rhythm, Pacing, and Timing in Editing</li> <li>Analyze Methodologies for Visual Storytelling and Emotional Impact</li> </ul>		
Course Outcome:		
- Critically Analyze and Explain Narrative C	Construction Through Editing	
- Explain and Evaluate the Perceptual Impac	ct of Editing Rhythm and Pacing	
- Propose Conceptual Approaches for Enhar	ncing Storytelling and Emotional Resonanc	e
- Evaluate Video Editing Styles Based on Aesthetic and Genre Theories		
Conten	t	Hrs
Uni	t - 1	
Linear and Non-Linear Editing, Principles of V	Video Editing, Symbolism, Simultaneity	
Continuity, Inspiration for Every Editing, The Th	ree -Point Edit, Working in the Timeline,	13
Transitions, Key framing Color Correction & Co	lor Grading	
Unit – 2		
Stabilizing a Shot, controlling shaky video, Cropping the borders, Corner Pin Tracking,		
Animating Masks, Motion Track, Introduction	to Mask, Animating Masks, Creating a	13
Simple Rotoscopic Animation		
Unit – 3		
Filters, Plugins, Path Animation, Compound Effe	cts. Precomposing and Nesting. Applying	
Layer Blending Modes, Wave World and Caust	tics, Looks, Presets, Markers, Collecting	13
Projects	. , , , , ,	
Unit – 4		
Stabilization, Shutterfix, Camera Properties, Foc	cal length, Resolution, Marker placement	
Layering solution, Scene Orientation, Exporting	Solution.	13
Reference Books:		
1. Gary H. Anderson, "Video Editing and Post – Production: A Professional Guide", Focal Press		
Publications, 4th Illustrated Edition, 1999.		
2. Declan McGrath, "Editing and Post Production", Focal Press Publications, Illustrated Edition, 2001.		
3. Eve Light Honthaner, "The Complete film Production Handbook, Volume 1", Focal Press		

Publications, 3rd Illustrated Edition, 2001.

Course Code: DSP-12 Lab	Paper Title: Video Editing Lab
Course Credits: 2	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 10
Exam Marks: 40	Exam Duration: 3 Hours

The following activities shall be carried out in the lab.

- 1. Project Setup & Media Import
- 2. Basic Cutting & Assembly
- 3. Audio Level Adjustments & Fades
- 4. Transitions: Cuts, Dissolves & Wipes
- 5. Creating Titles & Graphics
- 6. Essential Color Correction
- 7. Speed Ramping & Freezing Frames
- 8. Multi-Track Audio Mixing
- 9. Keyframing Effects
- 10. Advanced Audio Cleanup
- 11. Green Screen (Chroma Key) Basics
- 12. Short Narrative Assembly & Export

### **Reference Books**

- 1. Declan McGrath, "Editing and Post Production", Focal Press Publications, Illustrated Edition, 2001,
- 2. Eve Light Honthaner, "The Complete film Production Handbook, Volume 1", Focal Press Publications, 3rd Illustrated Edition, 2001.

Course Code: DSE-1	Course Name: User Interface Desig	gn
Course Credits: 2	Hours of Teaching/Week: 2	
Total Contact Hours: 26	Formative Assessment Marks: 10	
Exam Marks: 40	Exam Duration: 2 Hours	
Objective:	l	
- Understand Foundational UI Design Prince	iples and Heuristics	
- Comprehend the Cognitive and Psycholog	ical Aspects of User Interaction	
- Analyze Information Architecture and Inte	eraction Design Theories	
Course Outcome:		
- Critically Analyze and Apply Core UI Des	sign Principles	
- Explain User Behavior through Cognitive	Design Theories	
- Propose Conceptual Solutions for Information Organization and Interaction Flow		
- Evaluate UI Designs Based on Usability and Accessibility Theories		
Conten	t	Hrs
Unit - 1		
Introduction to User Interface Design Theory,	Definition, and scope of UI Design as a	
theoretical discipline, Historical evolution of U	JI concepts, Core UI Design Principles,	13
Theoretical understanding of consistency, feedback, visibility, learnability, efficiency, and		
satisfaction, Usability Heuristics and Guidelines		
Un	it – 2	
Users Think & Interact, asic ideas about how h	umans see, pay attention, and remember,	
Managing Mental Effort & Making Choices, Emotions, Trust & Persuasion in UI, 13		13
Organizing Information in UI Understanding different types of navigation (main menu, side		
menus, in-content links), Basic ways users intera	ct (e.g., clicking, typing, dragging).	
Reference:		
1. About Face: The Essentials of Interaction Design" by Alan Cooper, Robert Reimann.		
David Cronin, and Christopher Noessel		
2. "Designing with the Mind in Mind: A Simple Guide to Understanding User Interface		
Design Guidelines" by left Johnson		
3 "Interaction Design: Beyond Human-Computer Interaction" by Vyonne Rogers, Helen		
Sharn and Jenny Preece		
Sharp, and Jointy Treece		

# Semester IV

Course Code: DSC-10	Course Name: Audio Production	
Course Credits: 3	Hours of Teaching/Week: 4	
Total Contact Hours: 52	Formative Assessment Marks: 20	
Exam Marks: 80	Exam Duration: 3 Hours	
Objective:		
- Understand Foundational Acoustic and Ps	ychoacoustic Principles	
- Comprehend the Theoretical Basis of Aud	io Signal Processing	
- Analyze Methodologies for Audio Capture	e and Recording	
Course Outcome:		
- A Critically Analyze and Explain Acoustic	e Phenomena	
- Explain and Evaluate Audio Processing Al	lgorithms	
- Propose Conceptual Approaches to Audio	Recording Scenarios:	
- Evaluate Audio Production Practices Base	d on Sonic Theories	
Conten	t	Hrs
Unit - 1		
Basic physics of sound, Key properties of sound: pitch (frequency), loudness (amplitude),		
and timing (phase), humans hear and interpret sounds, Microphone & Speaker Mechanism, 1		13
Microphone & Placement techniques, recording techniques, Stereo recording techniques,		
Setups and Equipment, Computer Based Recording, Tempo, Harmony and Beats.		
Un	it – 2	
Introduction to Audio software's, Software Inter-	face, Settings and Preferences, Recording	
through audio software, Processing in audio s	software, introduction to spectrogram -	13
horizontal and vertical spectrogram, Signal R	econstruction, Noise Cancelling, Audio	
Filters.		
Unit – 3		
Different types of microphones (dynamic, con	denser, ribbon), theory behind common	
microphone placement for different sound source	es, proximity effect, conceptual path of an	13
audio signal from a microphone through preamp	os to Adobe Audition. "Gain staging" for	
clean audio levels		
Unit – 4		
Audio Representation, Wave and Wave Forms,	Frequency and Pitch, Dynamics Intensity	
and Loudness, Timbre, Midi Representation, Ana	log Signal, Digital Signal, Time Rapping,	13
Music Synchronization, Audio Thumb Nailing, Audio Precision, Recall, F-Measure.		

## **Reference Books:**

- 1. Rhonda L. Blair, "Acting: The first six Lessons", Routledge Publications, 2010, 2nd Edition.
- 2. Tomlinson Holman, "Sound for film and television, Volume 1", Focal Press Publications, 2002, 2nd Illustrated Edition.
- 3. John Purcell, "Dialogue Editing for motion picture: a guide to the invisible art", Elsevier Publications, 2007, Illustrated Edition.

Course Code: DSP-10 Lab	Paper Title: Audio Production Lab
Course Credits: 2	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 10
Exam Marks: 40	Exam Duration: 3 Hours

- 1. Exploring the Audition Interface & Importing Audio
- 2. Basic Editing in Waveform Editor
- 3. Adjusting Volume (Amplitude)
- 4. Basic Noise Reduction
- 5. Applying a Simple EQ (Equalization)
- 6. Using Compression for Dynamic Control
- 7. Creating a Multitrack Session & Arranging Clips
- 8. Panning and Volume Automation in Multitrack
- 9. Applying Reverb in Multitrack
- 10. Simple Delay Effect
- 11. Exporting a Multitrack Mixdown
- 12. Create sound design for music video

### **References:**

1. Rhonda L. Blair, "Acting: The first six Lessons", Routledge Publications, 2010, 2nd Edition.

2. Tomlinson Holman, "Sound for film and television, Volume 1", Focal Press Publications, 2002, 2nd Illustrated Edition.

Course Code: DSC-11	Course Name: Surfacing & Lighting
Course Credits: 3	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 20
Exam Marks: 80	Exam Duration: 3 Hours
Objective:	

- Understand the Physics and Perception of Light & Color
- Comprehend the Theoretical Basis of Shading Models and Material Properties
- Analyze Methodologies for Light Transport and Illumination

## **Course Outcome:**

- Critically Analyze and Explain Light-Matter Interactions
- Explain and Evaluate Shading Models and Material Attributes:
- Propose Conceptual Approaches to Global Illumination and Light Simulation
- Evaluate Surfacing and Lighting Designs Based on Artistic & Technical Theories

Content	Hrs	
Unit - 1		
Introduction to Surfacing and Lighting. Understanding Color Theory, Introduction to		
lighting and importance of lighting animation - Basic Lighting Concepts and types of lights	13	
and change the colour of the light and light attributes and rendering - Shortcuts		
<b>Unit</b> – 2		
Application of lighting in Maya. Basic Lighting in Maya. Basic Lighting Concepts. Light		
Linking. Three-point lighting set up. Absorption, Reflection of Light, Refraction of Light.	13	
Ambient Light. Directional Light. Point Light. Spot Light. Area Light. Volume light.		
Shadows. Raytraced Shadows.		
Unit – 3		

Illumination, Surface Geometry, Surface Generation Techniques, Colour and Shape Generation, Layering and Compositing Light linking, Introduction to UVs, UV 13 unwrapping, UV unfolding, Types of UV unwrapping: Spherical, Cylindrical, Planner, Automatic.

#### Unit – 4

Introduction to Substance Painter, Link to Raster Software, Bump Mapping, Types of textures, Types of materials, Basic properties of materials, Reflection, Refraction, Colour, 13 Transparency, Hyper-shade.

### **Reference Books:**

- 1. Rhonda L. Blair, "Acting: The first six Lessons", Routledge Publications, 2010, 2nd Edition.
- 2. Tomlinson Holman, "Sound for film and television, Volume 1", Focal Press Publications, 2002, 2nd Illustrated Edition.

3. John Purcell, "Dialogue Editing for motion picture: a guide to the invisible art", Elsevier Publications, 2007, Illustrated Edition.

Course Code: DSP-11 Lab	Paper Title: Surface and Lighting Lab
Course Credits: 2	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 10
Exam Marks: 40	Exam Duration: 3 Hours

The following activities shall be carried out in the lab.

- 1. Type Texturing
- 2. Rusty Automotive Texturing
- 3. Texturing Alley (i) preparing / collecting texture (ii) Texturing using nodes
- 4. Low Poly game Texturing texturing using nodes & texture using normal mapping
- 5. Human Skin Texturing preparing / collecting texture & texturing using nodes
- 6. Animal Skin Texturing preparing / collecting texture& texturing using nodes Types of lights / properties / work flow
- 7. Lighting techniques 2 point & 3 point
- 8. Create a torch; use fog; glow
- 9. Create a street, use ramp, volume light (for games)
- 10. Under water scene / early morning scene
- 11. Interior and exterior lighting
- 12. HDRI mapping / DOF Lense / Global illumination (GI) / Final Gather (FG) /Analyzing Loudness

#### **Reference Books**

- 1. Dariush Derakhshani, Introducing Maya 2016: Autodesk Official Press book, 1 Edition, Sybex, 2015.
- 2. Steven Worley, Ken Perlin, Texturing and Modeling: A procedural approach, 3rd Edition, Morgan Kaufmann, 2003.

Course Code: DSC-9	Course Name: Introduction to Blen	ıder
Course Credits: 3	Hours of Teaching/Week: 4	
Total Contact Hours: 52	Formative Assessment Marks: 20	
Exam Marks: 80	Exam Duration: 3 Hours	
Objective:	1	
- Understand Blender's Core Design Philoso	ophy and Modularity	
- Grasp the Theoretical Basis of 3D Data Re	epresentation in Blender:	
- Analyze the Conceptual Workflow of 3D (	Content Creation in Blender	
Course Outcome:		
- Articulate Blender's Architectural Compor	nents and Their Roles	
- Explain Fundamental 3D Data Manageme	nt Concepts in Blender	
- Evaluate Conceptual Approaches to 3D W	orkilow Optimization in Blender	
- Discuss Blender's Role in the Broader 3D Industry and Community		TT
		Hrs
Uni	t - 1	
Open-source software, people contribute to Blender's development, Comparing Blender to		
paid 3D software, Brief history and how the cor	nmunity helps it grow, Blender's Layout,	13
3D Space, Modifiers		
Un	it - 2	
Making Models with Polygons, basic parts of a 3	3D model: points (vertices), lines (edges),	
and flat surfaces (faces), Smooth and Precise Sh	apes with Curves, Simple uses for curves	13
sculpting or fluid effects armature	in a 5D grid, like digital clay (voxels),	
Uni	t – 3	<u> </u>
Different Ways to Create Models, Boy modelin	Making models automatically Colors	
and Textures Shader Editor Lighting Your 3D	Scene different types of lights HDRIs	12
The Basics of Making a Final Image.	seene, uniform types of ngins, fibrais,	13
TI	4 4	
		1
Sharing Your Blender Files: Common types of 3	D files used for sharing (like FBX, OBJ),	
add-ons" are and now they add new features to B.	lender, Blender Fits in Professional Work,	13
Basic ideas about working with Blender in a team setting, Future Ideas in 3D with Blender:		
scanning real objects		
Reference Books.		
1. "Blender For Dummies" by Jason van Gumster		
2. "The Complete Guide to Blender Graphics: Computer Modeling & Animation" by John M.		
Blain:	Blain:	

Course Code: DSP-9 Lab	Paper Title: Fundamental Blender Lab
Course Credits: 2	Hours of Teaching/Week: 4
Total Contact Hours: 52	Formative Assessment Marks: 10
Exam Marks: 40	Exam Duration: 3 Hours
Practical List	
1. Basic Scene Setup and Navigation	
2. Creating and Transforming Primitives	
3. Organizing with Collections	

- 4. Simple Box Modeling A Table
- 5. Smoothing with Modifiers A Coffee Mug
- 6. Basic Mesh Cleanup
- 7. Simple Material Application
- 8. Basic Lighting Adding a Light
- 9. Simple Camera Setup
- 10. Exporting a Simple Model
- 11. Using a Simple Deformer Bending a Plane
- 12. Exploring the Graph Editor for Simple Animation

#### References:

## 1. Blender For Dummies'' by Jason van Gumster:

2. "**The Complete Guide to Blender Graphics: Computer Modeling & Animation**" by John M. Blain

Course Code: DSE-2	Course Name: Film Direction (Elective)	
Course Credits: 2	Hours of Teaching/Week: 2	
Total Contact Hours: 26	Formative Assessment Marks: 10	
Exam Marks: 40	Exam Duration: 2 Hours	

# **Objective:**

- Understand the Director's Role in Cinematic Storytelling
- Comprehend Theoretical Frameworks of Visual Language and Mise-en-scène
- Analyze Methodologies for Guiding Performance and Collaborative Storytelling

# **Course Outcome:**

- Critically Analyze and Articulate Directorial Intent in Films
- Explain and Evaluate Visual Storytelling Techniques
- Propose Conceptual Approaches for Directing Performance and Crew Collaboration
- Evaluate Filmic Pacing, Rhythm, and Stylistic Choices

Content	Hrs	
Unit - 1		
Role of the Film Director How we read and understand an image - Director's Responsibility,		
Moral, artistic, Technical, and financial - interlocking roles of various technicians and	13	
artistes in the making of a film. Film as the Director's medium of expression-Their		
contribution to the art of film, Director & Script Idea.		
Unit – 2		
Director & Camera Choice of lenses and their effects — Depth of fields and its importance		
camera movements — Pan, tilt, dolly in dolly out, Tracking shots, Crane shots — Subject	13	
movement. — Connotative memory of the shot - Camera angles. Director & Editing		
Constructive editing of Eisenstein and relational Editing of V.I.		
Reference Books:		

- 1. "On Directing Film" by David Mamet
- 2. "Film Art: An Introduction" by David Bordwell and Kristin Thompson,
- 3. "The American Cinema: Directors and Directions, 1929-1968" by Andrew Sarris

Course Code: Compulsory 3	Course Name: Web design		
Course Coue. Compulsory 5	Course Name: Web design		
	(Compulsory Paper)		
Course Credits: 2	Hours of Teaching/Week: 2		
Total Contact Hours: 26	Formative Assessment Marks: 10		
Exam Marks: 40	Marks: 40 Exam Duration: 2 Hours		
Objective:			
- Understand Foundational Principles of We	b Design and User Experience (UX)		
- Comprehend Theoretical Frameworks of In	nformation Organization and Content Strate	egy	
- Analyze Methodologies for Visual Design	and Interface Aesthetics:		
Course Outcome:			
- Critically Analyze and Apply Core Web Design and UX Principles			
- Explain and Evaluate Information Architecture and Content Presentation			
- Propose Conceptual Approaches for Visua	- Propose Conceptual Approaches for Visual Web Interface Design		
- Evaluate Web Designs Based on Performa	nce. Accessibility, and Emerging Theories		
Content		Но	
		urs	
Uni	t - 1		
Web Design Fundamentals, Core Design Princip	les, consistency, clear feedback, and easy		
navigation designs should work well on differen	t screen sizes (responsiveness). Usability	13	
Rules, Organizing Website Content, Planning Co	ontent. Navigation Theories		
Uni	it – 2	1	
Navigation Theories, Visuals & Aesthetics on th	e Web, Typography & Color, Imagery &		
Interface Look, Web Performance, Accessibility a	& Future, Basic ideas for making websites	13	
load faster, Designing for Everyone, New Web T	rends		
Reference Books:			
1 "Don't Make Me Think Revisited: A Cor	mmon Sense Approach to Web Usability	v" hv	
Steve Krug "Resilient Web Design" by Jeremy Keith (web design)			
Steve King, Resident web Design by Jereiny Reith, (web design)			

Question Pattern			
Part – A			
1. Answer any <b>TEN</b> sub-questions (10×2=20)			
Sub-question	Unit		
a, b, c	1		
d, e, f	2		
g, h,i	3	20	
j, k, l	4		
Part –	В		
(Answer any <b>ONE</b> full question from (Combinations of sub-que	om each unit – 15 marks each) stions of 3 to 6 marks)		
Unit-1			
2.		15	
3.			
Unit-2			
4.		15	
5.			
Unit-3			
6.		15	
7.			
Unit-4		_	
8.		15	
9.			
Total		80	

# Scheme of Assessment for Theory Examination

The practical examination in the concerned subject specified in the I Semester to VII Semester shall be conducted for 50 marks. There shall be two components – Problem solving and execution and Viva voce components. 50 marks can be distributed as follows. Each Practical paper includes Two Parts- PART A and PART B. One question shall be asked in each part.

SN	Details Marks		Total		
		i.	Problem Solving Approach and Designing	8	
	PART A	ii.	Virtual Tool Designing	5	18
1.		iii.	Demonstration	5	
		i.	Problem Solving Approach and Designing	8	
2.	PART B	ii.	Virtual Tool Designing	5	18
		iii.	Demonstration	5	
3.	Record				4
Total Marks			40		