



TILAK MAHARASHTRA VIDYAPEETH

Declared as Deemed to be University Under Section 3 of UGC Act 1956

Reaccredited by NAAC with 'B++' Grade

ISO 21001 : 2018 Certified



Department of Digital Arts

NAME OF THE PROGRAM

**605-BSC Animation and VFX
Academic Year 2025-26**

2nd YEAR

SEMESTER III

YEAR	2nd year	
SEMESTER	3rd	
NAME OF COURSE	Introduction to AI (Pr)	
COURSE CODE	BSAV -24-301	
PAPER NO	1	
MARKING SCHEME	End-Semester (EXT):	Continuous evaluation (INT): 50
CREDITS	Total: 2	
	Theory:00	Practical : 02
TEACHING HOURS	Theory: 00	Practical: 30

COURSE OBJECTIVES:

- To introduce the basic concepts and techniques of Artificial Intelligence relevant to animation.
- To understand how AI contributes to creating intelligent, responsive, and lifelike characters.
- To encourage the use of AI tools in storytelling, asset generation, and procedural animation.
- To build awareness of ethical considerations in AI-generated content and animation.

COURSE OUTCOME:

The student will be able to:

- Understand the fundamentals of AI and its relevance to the animation industry.
- Apply AI-based tools and techniques in animation workflows.
- Create basic animations using AI-supported software (e.g., for character motion or lip-syncing).
- Develop intelligent behaviours for animated characters using logic or machine learning.

COURSE DETAILS:

Unit No	Title of the unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT (continuous evaluation)	EXT (end-sem)
1	Introduction to AI in Creative	9		PR	10	-

	Media • What is AI? • AI in art and animation • Overview of tools and use-cases					
2	Character Intelligence & Behavior • Basics of logic-based character behavior • State machines and decision trees • Introduction to machine learning in character actions	7		PR	10	-
3	Generative AI for Storytelling • Using AI to generate scripts, dialogues, and storyboards • Voice synthesis for character dubbing • AI-assisted scene planning	5		PR	10	-
4	Procedural Animation and Automation • Rule-based animation systems • AI in crowd simulation and background animation • Physics-based animation enhancements	5		PR	10	-
5	Ethics & Future of AI in Animation • Deepfakes and originality • AI in creative ownership and authorship • Future trends and job impact in animation industry	4		PR	10	-
Total Hours		30			50	-
Text Books		• "Artificial Intelligence for Artists: A Complete Guide" Author: Gene Kogan • "The Animator's Survival Kit"				

	Author: Richard Williams • "Deep Learning with Python" Author: François Chollet
Reference Books	• "Artificial Intelligence for Games" Author: Ian Millington • "Generative Deep Learning" Author: David Foster

Year	2nd year	
SEMESTER	3rd	
NAME OF COURSE	Video Editing (PR)	
COURSE CODE	BSAV -25-302	
PAPER NO	2	
MARKING SCHEME	End-Semester (EXT): 40	Continuous evaluation (INT): 60
CREDITS	Total: 4	
	Theory: 0	Practical :4
TEACHING HOURS	Theory: 0	Practical: 60

COURSE OBJECTIVES:

- To introduce the fundamentals of video editing techniques and tools.
- To develop practical skills using professional editing software like Adobe Premiere Pro.
- To understand the principles of continuity, pacing, and storytelling in editing.
- To explore audio-video synchronization, transitions, color correction, and effects.
- To enhance creative decision-making in post-production workflows.

COURSE OUTCOME:

The student will be able to

- Understand the core concepts and history of video editing.
- Demonstrate proficiency in using non-linear editing (NLE) software.
- Apply editing techniques to create narrative coherence and visual impact.
- Edit audio tracks, apply transitions, effects, and manage timelines effectively.
- Execute complete video projects from raw footage to polished output.

COURSE DETAILS:

Unit		No of			Marks Weightage

No	Title of unit with detailed content	teaching-learning hours	Theory	Practical	INT (continuous evaluation)	EXT (end-sem)
1	Introduction to Video Editing - History and evolution of editing - Linear vs. Non-linear editing - Types of editing: continuity, montage, jump cuts, etc.	10		PR	10	6
2	Editing Software Interface - Workspace overview - Importing and organizing media - Basic editing tools and timeline navigation	12		PR	10	6
3	Editing Techniques and Transitions - Cutting, trimming, and splicing - Adding transitions and effects - Use of B-roll and cutaways	10		PR	10	6
4	Audio Editing - Syncing audio and video - Background score and voice-over - Audio normalization and effects	12		PR	10	7
5	Color Correction and Grading - White balance, contrast, exposure - LUTs and color grading styles - Visual storytelling through color	08		PR	10	8
6	Titles, Graphics, and Exporting - Creating lower-thirds, subtitles - Motion graphics basics	08		PR	10	7

	Export settings for different platform					
Total Hours		60	-		60	40
Text Books		"The Technique of Film and Video Editing: History, Theory, and Practice" Author: Ken Dancyger "Grammar of the Edit" Authors: Roy Thompson & Christopher J. Bowen "The Visual Story: Creating the Visual Structure of Film, TV and Digital Media" Author: Bruce Block				
Reference Books		"In the Blink of an Eye" by Walter Murch – A philosophical and practical look at the art of editing. "The Technique of Film and Video Editing" by Ken Dancyger – Covers both traditional and digital editing techniques, with film history context. "Adobe Premiere Pro Classroom in a Book" by Maxim Jago (Adobe Press) – Official training series from Adobe. Hands-on lessons for learning Premiere Pro.				

Year	2 nd year	
SEMESTER	3 rd	
NAME OF COURSE	3D Assets Modelling(Pr)	
COURSE CODE	BSAV -24-303	
PAPER NO	3	
MARKING SCHEME	End-Semester (EXT): 40	Continuous evaluation (INT): 60
CREDITS	Total: 4	
	Theory: 0	Practical :4
TEACHING HOURS	Theory: 0	Practical: 60

COURSE OBJECTIVES:

- Understand the principles of 3D modeling and asset creation.
- Learn Autodesk Maya's interface, tools, and modeling workflows.
- Develop technical proficiency in polygonal, NURBS, and subdivision modeling.
- Create optimized 3D assets with clean topology suitable for animation and games.

- Create a 3D asset portfolio showcasing props, environments, and stylized or realistic objects.

COURSE OUTCOME:

The student will be able to

- Identify different types of 3D assets and modeling techniques used in the industry.
- Demonstrate the ability to model basic and complex 3D objects using Maya tools.
- Utilize proper edge flow and polygon distribution for clean topology.
- Apply hard surface and organic modeling methods appropriately.
- Perform efficient UV unwrapping and layout for texture painting.

COURSE DETAILS:

Unit No	Title of unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT (continuous evaluation)	EXT (end-sem)
1	Introduction to Autodesk Maya • Interface, navigation, and basic tools • Viewports, outliner, and channel box • Maya project structure and asset management	10		PR	10	8
2	Polygonal Modeling • Primitive objects and modifiers • Extrude, insert edge loop, bridge, merge, and bevel tools • Blocking and detailing of 3D objects	12		PR	10	8
3	NURBS and Subdivision Modeling • NURBS curves and surfaces • Lofting, revolving, and birail modeling • Subdivision surfaces for high-	10		PR	10	8

	res detail					
4	Topology and Optimization • Edge flow, quads vs. tris, ngons • Retopology basics and cleanup tools • Low-poly vs. high-poly modeling	14		PR	15	6
5	Asset Development Project • Concept to model: prop or environment • Model optimization for animation/game • Turntable rendering and presentation	14		PR	15	10
Total Hours		60	-		60	40
Text Books		• Autodesk Maya Basics Guide <i>By Kelly Murdock</i> – Covers foundational modeling and interface usage. • Digital Modeling <i>By William Vaughan</i> – Focuses on professional modeling techniques and topology.				
Reference Books		• 3D Modeling for Beginners: Learn everything you need to know about 3D Modeling! Author: William Cullens				

Year	2nd year	
SEMESTER	3rd	
NAME OF COURSE	Animation Technique (Pr)	
COURSE CODE	BSAV -25-304	
PAPER NO	4	
MARKING SCHEME	End-Semester (EXT): 40	Continuous evaluation (INT): 60
CREDITS	Total: 4	
	Theory: 0	Practical :4
TEACHING HOURS	Theory: 0	Practical: 60

COURSE OBJECTIVES:

- Understand the fundamental principles and history of animation.
- Explore and apply various traditional and digital animation techniques.
- Develop skills in character design, storyboarding, and keyframe animation.
- Analyze and critique animation sequences based on motion, timing, and storytelling.

COURSE OUTCOME:

The student will be able to

- Describe the evolution and foundational principles of animation.
- Demonstrate proficiency in traditional animation techniques like flipbooks and stop-motion.
- Create storyboards and character sheets for animation projects.
- Apply squash and stretch, anticipation, and other animation principles in practical work.
- Evaluate animated content critically for its technical execution and narrative effectiveness.

COURSE DETAILS:

Unit No	Title of unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT (continuous evaluation)	EXT (end-sem)
1	Introduction to Animation • History and evolution of animation • Types of animation: Traditional, Stop-motion, 2D, 3D, Experimental • Key milestones in the animation industry	10		PR	10	8
2	Principles of Animation • The 12 Principles of Animation (Squash and stretch, Anticipation, Staging, etc.) • Application of principles in short exercises	10		PR	10	8

3	Traditional Techniques • Flipbook animation • Stop-motion (cutout, clay, object animation) • Rotoscoping basics	12		PR	10	8
4	Digital 2D Animation • Introduction to digital animation software • Layers, keyframes, and timeline • Walk cycle and lip sync basics	14		PR	15	6
5	Storyboarding and Project Work • Storyboarding fundamentals • Animatics and timing • Final project: creation of a short animated sequence	14		PR	15	10
Total Hours		60	-		60	40
Text Books		• The Animator’s Survival Kit by Richard Williams • Animation: The Mechanics of Motion by Chris Webster • Timing for Animation by Harold Whitaker and John Halas				
Reference Books		• The Illusion of Life: Disney Animation <i>Authors:</i> Frank Thomas & Ollie Johnston • Animation: The Mechanics of Motion <i>Author:</i> Chris Webster • Acting for animation <i>Author:</i> Ed Hooks				
Year		2nd year				
SEMESTER		3rd				
NAME OF COURSE		UI/UX Design (Pr)				
COURSE CODE		BSAV -24-305				
PAPER NO		5				
MARKING SCHEME		End-Semester (EXT): 40			Continuous evaluation (INT): 60	
CREDITS		Total: 3				
		Theory: 0			Practical :3	
TEACHING HOURS		Theory: 0			Practical: 45	

COURSE OBJECTIVES:

- To introduce students to the fundamental principles, theories, and methodologies of User Experience (UX) and User Interface (UI) design.
- To provide a comprehensive understanding of the user-centered design process, from initial research and ideation to final implementation and testing.
- To equip students with practical skills in using industry-standard design tools (like Figma, Adobe XD, or Sketch) for wireframing, prototyping, and visual design.
- To develop an understanding of information architecture, interaction design, and visual design principles to create effective and engaging digital interfaces.

COURSE OUTCOME:

The student will be able to

- Explain key UI/UX principles, heuristics, and user-centered design processes.
- Conduct user research using surveys, interviews, personas, and journey maps.
- Design user flows, wireframes, and interactive prototypes for digital products.
- Apply principles of visual design, typography, color theory, and layout in UI design.
- Use industry-standard UI/UX tools (Figma, Adobe XD, etc.) for creating prototypes.

COURSE DETAILS:

Unit No	Title of unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT (continuous evaluation)	EXT (end-sem)
1	Introduction to UI/UX • Difference between UI and UX • Design thinking process • UX lifecycle and deliverables •	9		PR	10	8
2	User Research & Analysis • User personas, empathy maps • User journey and task analysis • Competitive analysis and heuristic evaluation	9		PR	15	8
3	Wire framing & Prototyping	9		PR	15	8

	• Low-fidelity vs. high-fidelity wireframes • Interactive prototyping • Information architecture and navigation design					
4	Visual Design • Typography, color theory, grids, and layout • Iconography and micro-interactions • Branding in UI design	9		PR	10	6
5	Testing & Evaluation • Usability testing methods • A/B testing and analytics • Accessibility and inclusive design	9		PR	10	10
Total Hours		45	-		60	40
Text Books		• Don't Make Me Think: A Common Sense Approach to Web Usability Author: Steve Krug • The Design of Everyday Things Author: Don Norman • Lean UX: Designing Great Products with Agile Teams Author: Jeff Gothelf, Josh Seiden				
Reference Books		• Don't Make Me Think by Steve Krug • The Design of Everyday Things by Don Norman • About Face: The Essentials of Interaction Design by Alan Cooper • Seductive Interaction Design by Stephen Anderson				

YEAR	2nd year	
SEMESTER	3rd	
NAME OF COURSE	Communication Skills(TH)	
COURSE CODE	BSAV -24-306	
PAPER NO	6	
MARKING SCHEME	End-Semester (EXT): 20	Continuous evaluation (INT): 30
CREDITS	Total: 2	
	Theory:02	Practical :
TEACHING HOURS	Theory: 30	Practical:

COURSE OBJECTIVES:

- Remembering: Students will be able to recall and define key communication concepts of LSRW
- Understanding: Students will be able to explain the importance of effective communication in different contexts, such as personal relationships, professional settings, and public speaking.
- Applying: Students will be able to apply communication skills in various scenarios, such as delivering a persuasive speech, conducting a job interview, or resolving a conflict.
- Analyzing: Students will be able to analyze and evaluate different communication strategies, such as persuasive techniques, nonverbal cues, and rhetorical devices, to determine their effectiveness in achieving specific communication goals.

COURSE OUTCOME:

The student will be able to:

- Understand the methods of effective communication skills by using the techniques of LSRW
- Develop critical thinking skills to analyze and evaluate different communication strategies, such as persuasive techniques, nonverbal cues, and rhetorical devices, to determine their effectiveness in achieving specific communication goals.
- Identify ways to communicate effectively and confidently in a variety of situations, such as public speaking, group discussions, and interpersonal interactions.

- Apply communication skills in various professional settings, such as conducting job interviews, delivering presentations, and writing effective emails and reports.

COURSE DETAILS:

Unit No	Title of the unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT (continuous evaluation)	EXT (end-sem)
1	Unit 1: Grammar and Vocabulary Development: Applied Grammar and usage, Parts of Speech, Articles, Tenses, Subject-Verb Agreement, Prepositions, Active and Passive Voice, Clauses, modals, Reported Speech: Direct and Indirect, Sentence Structure, Punctuations, common errors.	9	TH		8	5
2	Unit 2: Developing Reading and Listening Skills: Reading Comprehension, Process, Active & Passive Reading, Reading Speed Strategies, Benefits of effective reading, note-taking, reading comprehension of technical material and SQ3R reading technique. Listening Skills: Meaning, process hearing and listening, types, barriers, importance.	7	TH		8	5
3	Unit 3: Developing Writing Skills: Planning, Drafting & Editing, writing with style, right- words selection, writing effective sentences, developing logical paragraphs, the art of condensation, précis, and essay.	7	TH		7	5

	Formal and Informal Letters: Letter to the Editors, Municipal corporation, Bank Managers etc					
4	Unit 4: Speaking Skills and Oral Presentation: Preparation, and Delivery using Audio – Visual Aids with stress on body language and voice modulations. (Topics to be selected by the instructor)	7	TH		7	5
Total Hours		30			30	20

Year	2nd year	
SEMESTER	3rd	
NAME OF COURSE	Environmental Studies (Th)	
COURSE CODE	BSAV -24-307	
PAPER NO	7	
MARKING SCHEME	End-Semester (EXT): 00	Continuous evaluation (INT): 100
CREDITS	Total: 4	
	Theory: 4	Practical :0
TEACHING HOURS	Theory: 60	Practical: 0

COURSE OBJECTIVES:

- To provide fundamental knowledge about the environment and its components.
- To understand the interrelationship between humans and the environment.
- To promote awareness about environmental problems and sustainable practices.
- To encourage conservation of natural resources and biodiversity.
- To sensitize students toward environmental laws, ethics, and the importance of eco-friendly development.

COURSE OUTCOME:

The student will be able to

- Explain the structure and function of various ecosystems and their significance.
- Analyze natural resource use and the need for conservation and sustainable development.
- Identify causes and effects of major environmental issues such as pollution, climate change, and biodiversity loss.
- Demonstrate awareness of environmental laws and policies relevant to India and the world.
- Adopt sustainable practices in daily life and advocate for environmental protection.

COURSE DETAILS:

Unit No	Title of unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT (continuous evaluation)	EXT (end-sem)
1	Introduction to Environmental Studies • Definition, scope, and importance • Multidisciplinary nature of environmental studies • Need for public awareness	10	TH		10	-
2	Ecosystems • Concept and structure of ecosystems • Forest, desert, aquatic ecosystems • Energy flow and ecological pyramids	12	TH		20	-
3	Natural Resources • Renewable and non-renewable resources • Forests, water, minerals, food, energy, land • Conservation methods and case studies	11	TH		15	-
4	Biodiversity and Conservation • Levels of biodiversity: genetic, species, ecosystem • India as a mega-diversity nation • Threats to biodiversity, conservation strategies	11	TH		20	-

5	Environmental Pollution - Types: air, water, soil, noise, thermal, nuclear - Causes, effects, control measures - Solid waste management and disaster management	08	TH		20	-
6	Social Issues and the Environment - Climate change, global warming, ozone depletion - Environmental ethics and sustainability - Environmental legislation in India (EPA, Forest Act, Wildlife Protection Act)	08	TH		15	-
Total Hours		60			100	-
Text Books		"Environmental Studies" Author: Erach Bharucha "Environmental Science: A Global Concern" Authors: William Cunningham & Mary Cunningham "Textbook of Environmental Studies for Undergraduate Courses" Author: Anindita Basak				
Reference Books		"Principles of Environmental Science: Inquiry and Applications" Authors: William P. Cunningham & Barbara Woodworth Saigo "Environmental Studies" Authors: Benny Joseph				

II year

IV Semester

YEAR	2 nd year	
SEMESTER	4 th Semester	
NAME OF COURSE	3D Advance Modelling (Pr)	
COURSE CODE	BSAV -24-401	
PAPER NO	1	
MARKING SCHEME	End-Semester (EXT):40	Continuous evaluation (INT): 60
CREDITS – MARKS	Total: 04	
	Theory :	Practical :04
TEACHING HOURS	Theory:	Practical: 60

COURSE OBJECTIVES:

- 3D Texturing Using Autodesk Maya Software
- Students can create the 3D character modelling in Maya.
- Students can create the background modelling.
- Students can create the 3D assets for animation films and visual effects film

Course Outcomes:

- Creation of a flexible modeling environment.
- Ability to easily modify models and implement design changes.
- Support for data sharing, and data reuse Knowledge enabled.
- Capture of design constraints and design intent as well as the final model geometry.
- Management of non-geometric as well as geometric design information.
- The 3D Part is the Master Modeller for Drawings, Assemblies and Analyses which are associative to the 3D parts.

COURSE DETAILS:

Unit No	Title of unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT 60 (continuous evaluation)	EXT 40 (end-sem)
1	• Hardware requirements • Installation and Licensing	7	-	PR	5	5

	Techniques • Getting Started with MAYA • Production Pipeline • Understanding 3D Software - what is the 3D, (Software Name Maya) • Basic concepts for understanding how 3D animation software works.					
2	• Project Workflow and setting up scene • Understanding the Interface • Tool, menus, windows etc. • File management: formats and significances • Intro to Maya Interface -The Maya Interface like Understanding Menus, • Icons, Dialog Boxes, viewport manipulation, like Creating primitive objects • Moving Objects in the 3D Space • Maya View Tools • Layouts, Saved Layouts, Channel Box and Manipulators Grouping and Parenting • Spline Modeling, Lofting and revolving surfaces, Basic Props Modeling. Etc. •	8	-	PR	5	5
3	• Navigating 3D space with general view port concepts • Transforming objects • Object creation and selection techniques using Primitives • Modeling Methods: Polygonal modeling • Basic Props Modeling • Understanding the basics of the	8	-	PR	5	5

	modeling tools. • Understanding Basic Props Modeling,					
4	• BG Modeling - Understanding of the polygonal modeling tools and how it works for creating props modeling by giving demonstration • Head Modeling -Understanding of the polygonal modeling methods by using Polygon primitives and tools like • Mesh tools, • Edit Mesh Tool, • Mesh Display etc. • How it works by given demonstration on Background modeling. •	7	-	PR	10	5
5	• Human Body Modeling - Understanding by using polygonal modeling methods and tools • creating Organic Modeling • Head with Details polygonal methods • Nose Part Modeling with details	6	-	PR	10	5
6	• Organic Hand (Wrist) Modeling - Understanding by using polygonal modeling methods and tools • Creating Organic Human Body (Torso) Modeling Part with Proportion. • by using polygonal modeling methods and tools, • Creating Organic Human Body with Details modeling • Female Body Modeling .	8	-	PR	5	5

7	• Understanding by using polygonal modeling methods and tools • Creating Organic Foot Modeling Part with Proportion. • Combining all Parts in one • Understanding by using polygonal modeling methods and tools • Attaching Head and Body Modeling together and Applying details part on Human Body and finalize the Human Character 3D Modeling By using Maya. • Female Head Modeling	8	-	PR	10	5
8	• Cartoon Character Head and body Modeling -Understanding by using polygonal modeling methods and tools, • Alien Character body Modeling -Understanding by using polygonal modeling methods and tools	8	-	PR	10	5
Total Hours		60	-		60	40
Text Books		• "Digital Modeling" Author: William Vaughan • "The Art of 3D Computer Animation and Effects" Author: Isaac Kerlow				
Reference Books		• "Stop Staring: Facial Modeling and Animation Done Right" Author: Jason Osipa • "Polygonal Modeling: Basic and Advanced Techniques" Author: Mario Russo • "Character Modeling with Maya and ZBrush" Author: Jason Patnode				

YEAR	2nd year	
SEMESTER	4th Semester	
NAME OF COURSE	3D Texturing(PR)	
COURSE CODE	BSAV -24-402	
PAPER NO	2	
MARKING SCHEME	End-Semester (EXT): 40	Continuous evaluation (INT): 60
CREDITS	Total: 4	
	Theory :	Practical : 4
TOTAL TEACHING HOURS	Theory:	Practical: 60

COURSE OBJECTIVES:

- Master Advanced Texturing Techniques in Maya
- Create and Apply Realistic Materials and Shaders
- Understand UV Mapping and Unwrapping
- Work with Texture Painting and Image Textures
- Implement Advanced Texture Mapping Techniques
- Optimize Textures for High-Quality Rendering and Performance

COURSE OUTCOME:

- Proficiency in Advanced Texturing Techniques
- Mastery of Material and Shader Creation
- Expertise in UV Mapping and Unwrapping
- Advanced Texture Painting and Image Textures Integration
- Advanced Mapping and Multi-layered Texturing

COURSE DETAILS:

Unit No	Title of unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT (continuous evaluation)	EXT (end-sem)

1	• Overview of advanced texturing tools in Maya. • Understanding the relationship between modeling, texturing, and shading in the 3D pipeline.	6		(Pr)	5	3
2	• Exploring the Hypershade editor and node-based workflows in Maya. • UV unwrapping techniques: manual and automatic mapping methods.	9		(Pr)	6	4
3	• Working with UV shells, seams, and layout optimization for complex models. • Creating and optimizing UV maps for realistic texture application. • Best practices for scaling and sewing UVs efficiently.	8		(Pr)	7	4
4	• Using Maya's procedural texture tools (e.g., 3D textures, noise, fractal textures). • Generating and applying procedural textures for different materials.	8		(Pr)	8	3
5	• Advanced texture blending methods and creating custom texture maps. • Applying texture maps to objects through projection mapping and other techniques.	5		(Pr)	5	4
6	• Introduction to physically based rendering (PBR) workflows. • Designing and creating realistic materials (wood, metal, glass, fabric, skin) using Maya's Hypershade.	5		(Pr)	6	4
7	• Combining multiple shaders and layers for complex materials. • Creating shaders that react to lighting for photorealistic rendering results.	4		(Pr)	5	4
8	• Painting textures directly onto 3D models within Maya.					

	Using external applications (e.g., Photoshop, Substance Painter) to create complex texture maps.	5		(Pr)	5	4
9	- Creating seamless and high-quality textures, including normal, bump, specular, and ambient occlusion maps. - Refining painted textures and exporting them for use in Maya.	5		(Pr)	5	4
10	- Creating high-resolution textures for film-quality assets. - Using advanced rendering techniques in Maya (mental ray, Arnold) to achieve photorealistic textures.	5		(Pr)	8	5
Total Hours		60			60	40
Text Books		"Lighting for Animation: The Art of Visual Storytelling" Authors: Jasmine Katatikarn & Michael Tanzillo "Digital Lighting and Rendering" (3rd Edition) Author: Jeremy Birn "The Art of 3D Computer Animation and Effects" Author: Isaac V. Kerlow				
Reference Books		"Interaction of Color" – Josef Albers "The Elements of Color" – Johannes Itten "Color: A Workshop for Artists and Designers" – David Hornung "The Art of Color" – Johannes Itten "Color: A Course in Mastering the Art of Mixing Colors" – Betty Edwards				

Year	2nd year	
SEMESTER	4th Semester	
NAME OF COURSE	Compositing Techniques (PR)	
COURSE CODE	BSAV -24-403	
PAPER NO	3	
MARKING SCHEME	End-Semester (EXT): 40	Continuous evaluation (INT): 60
CREDITS	Total: 4	
	Theory :0	Practical :4
TEACHING HOURS	Theory: 0	Practical: 60

COURSE OBJECTIVES:

- To familiarize the students with compositing CGI with Live action using various Compositing techniques.
- To describe various advanced compositing techniques like Camera Projection, tracking and Rotoscopy techniques.
- To construct CGI elements within the realm of the 3D workspace of the Compositing Package.
- To work on camera tracking skills

COURSE OUTCOME:

The student will be able to

- Recall the integrating of passes for compositing using Nuke
- Interpret various color manipulation techniques used for digital image generation
- Demonstrate advanced compositing techniques of the node based compositing software – NUKE
- Perform 3D manipulation techniques of working in the 3D work space of NUKE
- Create seamless integration of CGI and live action Plates using Camera Projection, tracking and Rotoscopy techniques.

COURSE DETAILS:

Unit No	Title of unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT (continuous evaluation)	EXT (end-sem)
1	Unit 1 Passes for Compositing • Pass Management, Bit Depth Allocation, Finding the Best Depth Channels, Color Channels for the Project	10		PR	10	6

2	Unit 2 LUT The LUT use and Specifications, Finding the Black's and White's, Node reusing to Maintain Color Correction, Use of Plugin's in 3D Channels	11		PR	15	8
3	Unit 3 Advanced Compositing Chroma Keying, Tracking and Stabilizing, Composite Hair and Fur, Using Vector Blur For Quicker Results	12		PR	15	8
4	Unit 4 Working in 3D 3D Compositing workflow, 3D match move, Environmental Mapping, Creating Reflections.	12		PR	10	8
5	Unit 5 Camera Projection and Tracking 3D Camera Projection and Tracking, 3D Channels and Depth Creation using Relight and Rotoscopy Solutions.	15		PR	10	10
Total Hours		60			60	40
Text Books		- Compositing Digital Images by T. Porter and T. Duff I Proceedings of SIGGRAPH '84, 18 (1984) I - The Art and Science of Digital Compositing by Ron Brinkmann - Wright's Compositing Visual Effects: Essentials for the Aspiring Artist [Paperback] 2007 – Paperback (2007) by S. Wright				
Reference Books		- The VES Handbook of Visual Effects by Okun J, Zwerman S. - Compositing Visual Effects – Essentials for aspiring artists by Steve Wright				

YEAR	2nd year	
SEMESTER	4th	
NAME OF COURSE	Camera Tracking & Match Moving (Pr)	
COURSE CODE	BSAV -25-404	
PAPER NO	4	
MARKING SCHEME	End-Semester (EXT): 40	Continuous evaluation (INT): 60
CREDITS	Total: 4	
	Theory :0	Practical :4
TEACHING HOURS	Theory: 0	Practical: 60

COURSE OBJECTIVES:

- To Familiarize the tools and techniques to create Match moving and effects
- To Understand the camera controls and techniques to shot for camera match-moving
- To Discover the different types of tracking in 2d as well as 3d and their applications
- To Learn Problem solving techniques to rectify the errors during the process of match-moving
- To Create content for broadcast, feature film and animation with 3D match-moving

COURSE OUTCOME:

The student will be able to

- Resolve stabilization issues in a footage
- Integrate seamlessly 2D & 3D elements in scene
- Explain Photogrammetry process and its application in VFX space
- Demonstrate expertise in calibrating camera and enable automatic tracking
- Implement various tracking methods on compositing shots as per requirements

COURSE DETAILS:

Unit No	Title of unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT (continuous evaluation)	EXT (end-sem)
1	Unit 1 Camera moves and basics of Tracking: • Camera moves, focus pull, camera tilt, handheld camera, Tracking fundamentals, key frame tracking, perspective and corner pining.	12		PR	10	6
2	Unit 2 Tracking and stabilization:	10		PR	10	8

	Solving different tracking shots, optimizing tracking and stabilization, multiple tracking points, complex tracking objects, tips and techniques					
3	Unit 3 Process of Match moving: The process of Match moving, Match moving software, photogrammetric, 2D tracking	12		PR	10	8
4	Unit 4 Automatic tracking: Automatic Tracking: Calibrating the camera, automatic tracking, editing automatic tracks, noise reduction	12		PR	15	8
5	Unit 5 Advanced tools and techniques: Set fitting, proxy geometry, fitting the set, altering the coordinate system, Effective troubleshooting, diagnosing problem	13		PR	15	10
Total Hours		60			60	40
Text Books		1. The Art and Technique of Matchmoving: Solutions for the VFX Artist ,author:EricaHornung,Routledge; 1st edition (17 August 2010) 2. Compositing Visual Effects–Essentials for the Aspiring Artist , author:SteveWright,Routledge; 2nd edition (17 January 2013)				
Reference Books		1. The VES Handbook of Visual Effects ,author:Okun J, Zwerman ,Focal Press; 1st edition (15 July 2010) 2. Motion Picture and Video Lighting , author:BlainBrown,Routledge; Second edition (13 September 2007)				

Year	2nd year	
SEMESTER	4th Semester	
NAME OF COURSE	OJT/ Field Work – (PR)	
COURSE CODE	BSAV -25-405	
PAPER NO	6	
MARKING SCHEME	End-Semester (EXT): 40	Continuous evaluation (INT): 60
CREDITS	Total: 4	
	Theory: 0	Practical :4
TEACHING HOURS	Theory: 0	Practical: 60

COURSE OBJECTIVES:

- To provide students with hands-on industry experience relevant to their field of study.
- To bridge the gap between academic learning and professional practice through real-world exposure.
- To develop professional competencies including communication, teamwork, time management, and problem-solving.
- To enable students to apply theoretical knowledge in practical work settings.
- To encourage adaptability, responsibility, and ethical work behavior in a professional environment.

COURSE OUTCOME:

The student will be able to

- Understand workplace structure, roles, and processes within their field.
- Apply subject-specific knowledge and technical skills in a real-world context.
- Demonstrate effective communication, collaboration, and time management at the workplace.
- Identify and solve basic work-related problems independently or within a team.
- Exhibit professionalism, ethical conduct, and responsibility in all assigned tasks.

COURSE DETAILS:

Unit No	Title of unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT (continuous evaluation)	EXT (end-sem)
1	Orientation & Pre-Placement Briefing • Guidelines, expectations, and assessment methods • Code of conduct	10		PR	10	10

2	Industry/Field Work - Assigned tasks and responsibilities under mentor supervision - Application of technical and interpersonal skills in daily work	15		PR	15	10
3	Documentation & Reporting - Daily or weekly logbook/diary - Final OJT/Field Work Report with reflection, learning outcomes, and feedback	15		PR	15	10
4	Review & Evaluation - Employer's feedback - Faculty assessment of report and presentation	20		PR	20	10
Total Hours		60	-		60	40

Year	2nd year	
SEMESTER	4th Semester	
NAME OF COURSE	Indian knowledge system (IKS)- (Th)	
COURSE CODE	BSAV -24-406	
PAPER NO	6	
MARKING SCHEME	End-Semester (EXT): 00	Continuous evaluation (INT): 50
CREDITS	Total: 2	
	Theory: 2	Practical :0
TEACHING HOURS	Theory: 30	Practical: 00

COURSE OBJECTIVES:

- To introduce students to the richness and diversity of Indian Knowledge Systems and their relevance to visual storytelling.
- To explore traditional Indian art forms, literature, aesthetics, and mythology as sources of animation content and style.
- To encourage research and creative interpretation of Indian epics, folklore, and cultural motifs through animation.
- To understand the philosophical, ethical, and symbolic aspects of Indian narratives in design and animation.
- To inspire culturally rooted storytelling and design thinking in animation projects.

COURSE OUTCOME:

The student will be able to

- Identify and explain key components of Indian Knowledge Systems such as mythology, art, literature, and performance traditions.
- Analyze Indian epics, folk tales, and traditional art styles for potential adaptation into animation.
- Integrate Indian visual elements (motifs, patterns, iconography) into concept art and character design.
- Create culturally authentic and aesthetically informed animation content rooted in Indian narratives.
- Demonstrate respect for cultural heritage while innovating within contemporary animation formats.

COURSE DETAILS:

Unit No	Title of unit with detailed content	No of teaching-learning hours	Theory	Practical	Marks Weightage	
					INT (continuous evaluation)	EXT (end-sem)

1	Introduction to Indian Knowledge Systems Overview of IKS domains – art, architecture, language, literature, science, philosophy	7	TH		10	
2	Indian Epics & Storytelling Traditions Ramayana, Mahabharata, Jataka tales, Panchatantra – narrative structure and character archetypes	5	TH		10	
3	Traditional Indian Art & Design Madhubani, Pattachitra, Warli, Kalamkari, Mughal miniature, and temple murals as visual styles	6	TH		10	
4	Symbolism & Aesthetics Understanding rasa theory, symbolism in Indian iconography, use of color, form, gesture	5	TH		10	
5	Folklore, Performance & Puppet Traditions Influence of Kathakali, Yakshagana, Shadow puppetry on animation and motion design	7	TH		10	
Total Hours		30	-		50	