ASIAN INSTITUTE OF DESIGN
ID

Bachelors in
VFX and Animation

Duration 4 Years (8 Semesters)

160 Credits

Bachelors in VFX and Animation (160 Credits)

SEMESTER 1

S. No	Course Title	Credits	End Exam W/P/J
1	Drawing Fundamentals 1	4	P
2	Digital Art	4	P
3	Classical Animation (2D Animation)	4	P
4	Design Fundamentals 1	2	T
5	English Communication 1	2	T
6	Computer fundamentals	2	P
7	Environmental Studies	2	T
Total		**20**	

SEMESTER 2

S. No	Course Title	Credits	End Exam W/P/J
1	Graphic Design	4	P
2	Matte painting	4	P
3	Animation 1(Principles)	4	P
4	Design Language 2	2	T
5	Drawing Fundamentals 2	2	P
6	English Communication 2	2	T
7	Indian Constitution	2	T
Total		**20**	

S. No	Course Title	Credits	End Exam W/P/J
SEMESTER 3			
1	Motion Graphics	4	P
2	Visualization for production	4	P
3	Animation 2	4	P
4	Rigging and Skinning 1	2	P
5	Photography and Cinematography	2	P
6	Elective	2	P
7	Minor Project	2	T
	Total	**20**	

S. No	Course Title	Credits	End Exam W/P/J
SEMESTER 4			
1	3D for VFX	4	P
2	3D matte painting	4	P
3	Body Mechanics	4	P
4	Rigging and Skinning 2	2	P
5	Preproduction	2	P
6	Elective	2	P
7	Minor Project	2	T
	Total	**20**	

	SEMESTER 5		
S. No	Course Title	Credits	End Exam W/P/J
1	Compositing I	4	P
2	Pantomime	4	P
3	Dynamics and FX	4	P
4	Minor project	2	P
5	Lighting and Rendering	2	P
6	Minor project	2	P
7	MOOC	2	P
	Total	**20**	

	SEMESTER 6		
S. No	Course Title	Credits	End Exam W/P/J
1	Compositing II	4	P
2	Facial Acting	4	P
3	Editing and color grading	4	P
4	Acting for animation	2	T
5	Post Production	4	
6	Minor Project	2	T
	Total	**20**	

	SEMESTER 7		
S. No	Course Title	Credits	End Exam W/P/J
1	Specialization Project	10	P/J
2	Research Methodology	2	T
3	Portfolio development	8	P
	Total	**20**	

	SEMESTER 8		
S. No	Course Title	Credits	End Exam W/P/J
1	Internship	20	P/J
	Total	**20**	

Semester 1

Drawing Fundamentals 1		
Sub Code: xxxxxx	Credits:	Duration:

Objective:

This module guides students through, Develop fundamental drawing skills using various types of lines, mastering the concept of contour drawing, exploring principles of shape and form in drawing, achieve depth and realism through shading techniques, utilize value and texture effectively in drawings, grasp the principles of perspective and proportion, apply composition techniques to create dynamic drawings, and engage in critical evaluation and discussion of artwork.

Indicative Content:

UNIT-1 Introduction to Drawing and Line
- Overview of different types of lines and their use in art
- Exercises in line quality and weight
- Introduction to the concept of contour drawing
- Basic exercises in contour drawing

UNIT-2 Shape and Form
- Introduction to the principles of shape and form in drawing
- Basic exercises in creating shapes and forms
- Exercises in shading and creating the illusion of depth

UNIT-3 Value and Texture
- Introduction to the use of value and texture in drawing
- Exercises in creating different types of texture
- Basic exercises in using value to create form and depth

UNIT-4 Perspective, Proportion, and Composition
- Introduction to the principles of perspective and proportion
- Basic exercises in one-point and two-point perspective
- Exercises in creating proportional figures and objects
- Introduction to the principles of composition in drawing
- Basic exercises in creating dynamic compositions
- Critique of student work and discussion of different approaches to drawing

OUTCOMES:

After successful completion of the module student shall be able to:

- Demonstrate an understanding of basic drawing tools and materials.
- Develop hand-eye coordination through basic drawing exercises.
- Create drawings that use different types of lines and shapes to convey form.
- Apply principles of perspective to create the illusion of depth.
- Execute principles of composition in drawing

Reading and Reference Materials:

- Drawing on the Right Side of the Brain by Betty Edwards

- Perspective Made Easy by Ernest Norling
- Anatomy for the Artist by Sarah Simblet
- Colour and Light: A Guide for the Realist Painter by James Gurney
- The Natural Way to Draw by Kimon Nicolaïdes

Assessment Mapping:

Assessment	Outcome-1 - 4	Outcome-5
Assignment	x	
Portfolio		x

Digital Art

Sub Code: xxxxxx	Credits:	Duration:

Objective:

This module guides students through digital art creation with Photoshop. Starting with tool introduction and photo restoration, it progresses to advanced features such as blending modes, masking, and double exposure. The module also covers material study, hand-drawn exploration, and painting techniques for still life, portrait, and environment, providing a well-rounded skill set in digital art and painting.

Indicative Content:

UNIT-1   • Introduction Photoshop and its tools and interface   • Photo restoration using Clone stamp and healing patch tools   • How to create basic vector art using Photoshop tools
UNIT-2   • Understanding of FX blending modes and masking.   • Double exposure and study of layers in Photoshop.   • Photo manipulation.
UNIT-3   • Basic understanding of the material study   • Hand-drawn study of basic materials on complex shapes.   • Painting a still life keeping in mind lighting.
UNIT-4   • How to paint a portrait   • How to paint an environment   • Introduction to matte painting

OUTCOMES:

After successful completion of the module student shall be able to:

- How to create believable backgrounds for movies, games, and more.
- Understand light composition.
- Understand how to optimize a scene.
- Learn to create Digital Art using Photoshop
- Material study
- 2d matte painting
- Still Life

Suggested Reading/ References:

Digital Matte Guide Book.

Digital painting techniques.

Digital art masters Buy 3D total.

Painting tricks and techniques by Gary Tonge.

Assessment Mapping:

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x

Classical Animation		
Sub Code:	Credits:	Duration:

Objective:

The Classical Animation course aims to provide students with a comprehensive understanding of fundamental animation principles through hands-on exercises. By the end of the course, students should be able to grasp the 12 Principles of Animation and apply this knowledge not only to traditional hand-drawn animation but also to the 3D animation medium. The course focuses on practical skills development, covering topics such as ball bounce with variations in weight, adding tails to animations, creating pendulum animations, and incorporating elements like arcs, overlap, and walk cycles. The ultimate goal is to equip students with the ability to use animation principles effectively, making their hand-drawn and 3D animations more convincing and entertaining.

Indicative Content:

UNIT-1
• Students will learn to bounce balls and understand the principles of stretch and squash. • Students will learn a ball bounce with a different weight.
UNIT-2

- Students will learn ball bounce with a tail attached to it.
- Students will learn Pendulum animation and understand the principles of arcs and overlap.

UNIT-3
- Students will be learning lamp jumps along with the basics of walk cycles.

OUTCOMES:

After successful completion of the module student shall be able to:

- Understand sic fundamentals of 12 Principles of animation.
- How to use this fundamental knowledge for animation in 3D medium.
- How to use principles of animation to make the hand-drawn animation more convincing and entertaining.

Suggested Reading/ References:

1. Timing for Animation by Harold Whitaker
2. The Illusion of Life
3. Animation Survival Kit

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

Design Fundamentals I

Sub Code: xxxxxx	Credits:	Duration:

Objective:

In this course, students will master fundamental visual elements, applying shapes, forms, colors, and textures in artistic expression. They will learn the impact of direction, position, space, and gravity on visual communication, acquiring practical skills in representation. Additionally, color theory will be employed for effective communication. In the second unit, students will differentiate between organic and inorganic shapes, proficiently create basic 3D forms, and explore textures in both 2D and 3D contexts. The third unit focuses on grasping design principles for 2D and 3D compositions, applying elements for balanced compositions,

exploring tessellation, transformations, and metamorphosis. Students will develop the ability to create values using black and white pigments and apply design principles such as repetition, structure, and contrast for creative expression..

Indicative Content:

UNIT-1 **Visual Elements & Communication 1** (Practical- Learning through Assignments)
- **Conceptual Elements** – Point, Line, Plane, Volume
- **Visual Elements-** Shape, Form, Size, Color, Texture

I. Direction, Position, Space and Gravity   **Practical Elements** – Representation,
ii. **Perception of Color** –meaning, emotion and communication from everyday experiences. Color in Art and Design
- **Visual communication**- through Image & Text – Meaning and associations

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UNIT-2 **Visual Elements & Communication 2** (Practical- Learning through Assignments)
- **Study of Shapes& Forms:** Types of Shapes- Study of Organic & Inorganic shapes -To study basic- 3Dimensional Forms- Study of Organic & Inorganic forms.
- To create Basic Geometrical forms such as Cube, Pyramid, Sphere, Cone, Cylinder etc. using different materials such as Clay, Plaster and paper boards, Wire, straw, sticks etc
- Study of Textures in 2D and 3 D.

UNIT-3 **Design Principles** in 2D and 3 D
- To study the Design Principles in 2D & 3D such as Balance, Harmony, Rhythm, Proportion, Scale, Unity, Dominance, Emphasis, Contrast, Movement and Space Using Design elements – such as Point, Line, Plane, Volume, Shape, Form, Size, Colour& Texture.
- To Create simple composition of Shapes and Forms in relation to Design using the above-mentioned principles and to study and work using tessellation, units and their shapes, transformations, and metamorphosis.
- To create values in Design using Black & White pigments
  1. Repetition 2. Structure 3. Similarity 4. Gradation 5. Radiation 6. Anomaly 7. Contrast 8. Concentration 9. Texture 10 Space.

OUTCOMES:

After successful completion of the module student shall be able to:

- After completing this course students will be able to execute the design concepts using elements and principles of Design
- Students learn the design terminologies of their usage
- The course provides an end number of examples and references to know the ways of seeing from the simple to the complex world.
- Course also provides an opportunity to learn from the interdisciplinary domains
- This Course allows students to observe and study nature and culture and develop visual sensibilities, perceptual skills, analytical skills, and Representational skills.

Reading and Reference Materials:

Design Fundamentals—Elements, Attributes, & Principles: A Beginner's Guide to Graphic Communication

Design Elements, Colour Fundamentals: A Graphic Style Manual for Understanding How Colour Affects Design

Assessment Mapping:

Assessment	Outcome-1 - 2	Outcome-3 - 5	Overall
Assignment	x		
Presentation		x	
Case study			x

Computer Fundamentals			
Sub Code: xxxxxx	Credits:		Duration:

Objectives:

Develop a foundational understanding of computer basics, including hardware, software, input/output devices, storage, networking, and peripheral devices. Explore the distinction between system software and application software, and gain an introduction to popular operating systems, the student will acquire proficiency in Microsoft Office applications, including Word, Excel, and PowerPoint, covering document formatting, data analysis, and presentation design and understand the fundamentals of web technology, including HTML document structure, CSS layout, and multimedia integration. Students will explore the concepts of cloud computing, including service models, deployment models, and key providers. Gain insights into cyber security, identifying common threats and understanding network security. Explore emerging technologies such as augmented reality (AR), virtual reality (VR), and the Internet of Things (IoT). Understand the hardware, software, and applications associated with AR and VR. Gain insights into IoT devices, protocols, platforms, and security. Demonstrate understanding of the course content through practical application and assessment, preparing for further exploration in the field of technology.

Indicative Content:

UNIT I - COMPUTER BASICS

Intro to Computers - Computer Applications - Computer Hardware - Input Devices - Output Devices - Storage Devices - Networking Components - Peripheral Devices. Software Overview - System software vs. Application software - Intro to Operating Systems - Functions of an OS - Popular OS.

UNIT II - MS OFFICE

Overview of Microsoft Office - Alternatives - Intro to Microsoft Word - Formatting Documents - Document Structure - Advanced Formatting Features. Intro to Microsoft Excel - Data Entry and Formatting - Formulas and Functions - Data Analysis and Visualization. Intro to Microsoft PowerPoint - Slide Design and Formatting - Transitions and Animations - Presenter Tools.

UNIT III - WEB TECHNOLOGY

Introduction to Web Technology - How Websites Work - Introduction to HTML - HTML Document Structure - Lists and Tables in HTML - Forms and Input Elements - Multimedia in HTML - Introduction to CSS - CSS Layout and Box Model - Styling Text and Fonts - Colors and Backgrounds.

UNIT IV - CLOUD COMPUTING AND CYBER SECURITY

Overview of Cloud Computing - Cloud Service Models - Cloud Deployment Models - Key Cloud Providers - Introduction to Cybersecurity - Common Cybersecurity Threats - Network Security.

UNIT V - EMERGING TECHNOLOGIES

Overview of Emerging Technologies - Introduction to Augmented Reality - AR Devices and Platforms - AR Applications - Introduction to Virtual Reality - VR Hardware and Software - VR Applications - Introduction to the Internet of Things - IoT Devices and Protocols - IoT Platforms and Security.

OUTCOMES:

After successful completion of the module student shall be able to:

1. Recall and identify fundamental computer concepts, including hardware, software, and peripherals.
2. Recognize input/output devices, storage components, and networking elements.
3. Understand the distinction between system and application software, and grasp operating system functions.
4. Familiarity with Microsoft Office applications, covering document formatting and presentation design.
5. Comprehend basics of web technology, including HTML, CSS, and multimedia integration.
6. Apply Microsoft Office knowledge to create and format documents, analyze data, and design presentations.
7. Apply HTML and CSS concepts to develop structured web pages.
8. Utilize cloud computing services and understand cybersecurity principles.
9. Explore emerging technologies like augmented reality, virtual reality, and the Internet of Things.

Reading and Reference Materials:

HTML & CSS, A Step-By-Step Guide for Beginners, By Daniel Bell

Office 2016 at Work For Dummies,By Faithe Wempen

Assessment Mapping:

Assessment	Outcome-1 - 7	Outcome-8 - 9	Overall
Assignment	x		
Presentation		x	
Test			x

Semester 2

Graphic Design		
Sub Code: xxxxxx	Credits:	Duration:

Objective:

This module guides students through, exploring the history and significance of graphic design, **a**pply graphic design principles in contemporary settings, incorporate sketching and doodling techniques in graphic design, familiarize with essential graphic design tools and

their applications, Students Discuss future trends in graphic design, including UI/UX and motion graphic, develop proficiency in color theory and its practical applications.

Students gain hands-on skills in raster graphics using Adobe Photoshop, create vector art and understand the principles of vector graphics, explore typography, masking, and other blend effects in design and understand elements and principles of good design, including layout techniques and branding strategies.

Indicative Content:

UNIT-1 Intro to Graphic Design
• The world's most famous graphic designer story.
• How to use their knowledge of graphic design into today's world.
• Use of sketching/doodling in graphic design Module Introduction
• Tools what we are going to cover
• Future of Graphic Design
• Use of graphic design in UI/UX, Motion graphic etc

UNIT-2 Colour Theory
• History of colour.
• Introduction to Pencil Colours
• How different brand will be useful to achieve a beautiful result.
• Use of different paper.
• Introduction to colour wheel
• Different types of Colour Harmonies, Cool and Warm colours
• Colour Psychology.
• Positivity and Negativity about different colours.

UNIT-3 Graphics.
Raster Graphics
• To introduce students to Adobe Photoshop. The aim of the module is to practically educate students on specific tools and functionalities within Photoshop relevant to Digital Art through practical exercises and assignments.
• Image Restoration (Understanding Clone and healing brushes to restore damaged photographs)
How to create vector art / polygon art using pen tool
• Photo manipulation, Image Editing, how to create buttons
Basic Tools introduction (pen tool, shape builder, selection and direct selection tool etc.
Vector Graphics
• Difference between vector and raster graphics
• How to create vector art using reference.
• Create an illustrator
• How to create a mandala
• Understanding of Typography
• Masking and another blend effect.
• How to make isometric design.
• How to create a logo using golden ratio and grid system
• How to create a branding

UNIT-4 Visual Communication
• Elements of Good Design (Line, Shape, Space, Value, Typography etc…)
• Principal of Good Design (Balance, Contrast, Figure and Ground, Alignment …)
• Grid System in logo Design and Other layout Techniques
• How to create personal branding and client branding

OUTCOMES:

After successful completion of the module student shall be able to:

- How to make presentation and branding
- Create illustration.
- Flyer and banner design.
- Creating brush and buttons.
- to optimize a scene.
- How to make presentation and branding
- How to create Logo design and other branding collateral.
- Use of Grid System in advertising.
- Different types of adverting materials

Suggested Reading/ References:

- Digital Masterclass
- Piximperfect – source you tube
- Illustrator by Densky
- Illustrator tutorial by GFX Mentor
- Everyday Design – Don Norman
- Grid System Raster Systems
- Logo Modernism

Assessment Mapping:

Assessment	Outcome-1 - 5	Outcome-6 - 9	Overall
Assignment	x	x	
Case Study		x	
Portfolio			x

3D Digital Modelling

Sub Code: xxxxxx	Credits:	Duration:

Objective:

This module aims to build a solid foundation in 3D digital modelling. Starting with tool and interface introduction, it progresses to creating complex assets using primitive tools and polygon modelling. The focus then shifts to developing soft skills, encompassing the creation of complex 3D models and unwrapping high-poly props. Finally, students learn UV mapping principles and apply them in modelling and unwrapping an interior scene filled with props.

Indicative Content:

UNIT-1
• Introduction to tools and interface
• Create complex assets using multiple primitive tools like Spline, loft, lathe, etc.
• Understanding and creating Objects using primitive tools and polygon modelling

UNIT-2
• Understanding the tools and interface of the digital modelling software and developing the soft skills to create from a simple to a complex shape 3D model from the provided references.
• Creating a 3D Prop which is a little complex
• Unwrapping a high poly prop using major modelling tools

UNIT-3
• Understanding UV layout, unwrap and, UV spreadsheet
• Modelling and unwrapping an interior filled with props using Polygons

OUTCOMES:

After successful completion of the module student shall be able to:

- Model a low poly prop with certain constraints with UV mapping and textures.
- Model an interior filled with props using all tools with a few constraints.
- Lighting, rendering and render passes.

Suggested Reading/ References:

1. Blender 3D For Beginners: DananThilakanathan
2. 10 Minute Blender: John Think
3. Digital Modelling – William Vaughan

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	

Portfolio		x

Animation I

Sub Code:	Credits:	Duration:

Objective:

The primary objective of the module is to learn the 3D software and to provide students with a solid foundation in animation principles and techniques in the 3D software. Through the structured units, students will learn the art of animating objects, starting with fundamental concepts such as stretch and squash in a bouncing ball. As they progress through the course, they will gain insights into handling different weights in ball animation, incorporating tails into their work, and creating more complex animations like pendulum movements with a focus on principles such as arcs and overlap

Indicative Content:

UNIT-1
- Students will learn bouncing ball and understand the principles of stretch and squash.
- Students will learn a ball bounce with a different weight.

UNIT-2
- Students will learn ball bounce with a tail attached to it.
- Students will learn Pendulum animation and understand the principles of arcs and overlap.

UNIT-3
- Students will be learning lamp jump along with basics of walk cycles.

OUTCOMES:

After successful completion of the module student shall be able to:

- Understanding of basic Principles of animation

- Understanding of Personality variations through poses
- Understanding of how inanimate object can be animated

Suggested Reading/ References:

1. Complete Animation Course, Chris Patmore, Barrons Educational Series Inc,2015
2. The Art of DreamWorks Animation: Celebrating 20 Years of Art- Ramin Zahed (All)
3. Animation Survival Kit

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

Design Fundamentals II

Sub Code: xxxxxx	Credits:	Duration:

Objective:

In this module, students will explore the influences of visual art, architecture, and the impact of print media, illustrations, and comics on sensory perception. They will also study the contributions of photography, cinema, television, and media to visual consciousness.

Students will delve into the complexity of 3D organic and inorganic forms, mastering the creation of designs using polyhedral structures. They'll gain insights into design principles related to form, space, and mass, exploring 3D concepts such as repetition, radiation, gradation, similarity, concentration, contrast, and anomaly.In Design Principles in 2D and 3D, students will conduct a texture study in 3 dimensions, study color contrasts, and create color compositions, helping them grasp different schemes in 3-dimensional design projects.

Indicative Content:

UNIT-1 Visual Culture
- Introduction to Visual Culture- Influences of Visual Art, Architecture.
- Brief History of print media, illustrations, comics etc., and influences on our senses and impact on Visual Culture.
- Study of photography, Cinema, Television and media impact on our visual consciousness contributing to Visual Culture.

UNIT-2
- To study complex / hybrid and fusion of 3Dimensional Organic & Inorganic forms. To learn to create designs using Polyhedral Structures and planes
- To Study and develop knowledge of the principles of design in relationship to form, space and mass. Identify relationships in form.
- To explore concepts in 3dimension such as Repetition, Radiations, Gradations, Similarity, Concentration, Contrast, Anomaly.

UNIT-3 Design Principles in 2D and 3 D
- Texture study in 3 dimensions: To create natural and manmade textural surfaces on Clay, POP etc.
- Study of Colour: To study the seven Colour contrasts (Hue, Light / Dark, Cold. Warm, Complementary Contrast, Simultaneous Contrast, Saturation, Extension). To study Subtractive and additive colours.
- To create colour compositions using different colour schemes like; Colour Harmony / colour balance complementary, warm, cool etc.in 3-dimensional Design.

OUTCOMES:

After successful completion of the module student shall be able to:

- After completing this course students will be able to execute the design concepts using elements and principles of Design
- Understands the impact of Design on Society and Culture
- Able to understand and create Forms and shapes from Organic & Inorganic references from Life.
- Able to develop 3D concepts based on Design Principles
- Student able to learn and create new surface textures for relevant Design forms.

Reading and Reference Materials:

1. Design Fundamentals—Elements, Attributes, & Principles: A Beginner's Guide to Graphic Communication
2. Design Elements, Colour Fundamentals: A Graphic Style Manual for Understanding How Colour Affects Design

Assessment Mapping:

Assessment	Outcome-1 - 2	Outcome-3 - 5	Overall
Assignment	x		

Presentation		x	
Case study			x

Drawing Fundamentals II

Sub Code: xxxxxx	Credits:	Duration:

Objectives:

This module guides students through exploring advanced perspective techniques for creating complex scenes and environments, to apply learned skills in exercises to effectively portray depth and dimension, help understand the principles of figure drawing, including capturing the human form and gesture. Engage in basic exercises to develop proficiency in figure drawing techniques, to explore various approaches to figure drawing to enhance artistic expression.

Students gain an introduction to the principles of color theory in the context of drawing by applying color theory concepts through exercises in creating palettes and conveying mood/emotion. Understand the principles of lighting and shadow in drawing, and practice creating dramatic lighting and shadows to enhance visual impact.

Indicative Content:

UNIT-1 Advanced Perspective   • Further exploration of perspective techniques   • Exercises in creating complex scenes and environments
UNIT-2 Figure Drawing   • Introduction to the principles of figure drawing   • Basic exercises in capturing the human form and gesture   • Exploration of different approaches to figure drawing
UNIT-3 Colour Theory   • Introduction to the principles of colour theory   • Basic exercises in creating colour palettes and using colour to convey mood and emotion.
UNIT-4 Lighting and Shadow   • Introduction to the principles of lighting and shadow in drawing   • Exercises in creating dramatic lighting and shadows   • Discussion of the role of lighting and shadow in creating atmosphere
UNIT-5 Final Project and Portfolio Review   • Students will complete a final project that demonstrates their understanding of the principles covered in the course   • Portfolio review and discussion of potential career paths in gaming and animation

OUTCOMES:

After successful completion of the module student shall be able to:

- Demonstrate advanced drawing skills, including sketching and gesture drawing
- Apply advanced principles of anatomy and prop   hand-drawn the human figure in different poses
- Use advanced shading techniques to create value and contrast in drawings
- Create visually compelling storyboards and narrative artwork
- Understand the principles of character design and concept art

Reading and Reference Materials:

- "Figure Drawing: Design and Invention" by Michael Hampton
- "The Artist's Complete Guide to Figure Drawing" by Anthony Ryder
- "Mastering Composition: Techniques and Principles to Dramatically Improve Your Painting" by Ian Roberts
- "Storyboards: Motion in Art" by Mark Simon
- "The Anatomy of Style: Figure Drawing Techniques" by Patrick J. Jones
- "The Skillful Huntsman: Visual Development of a Grimm Tale at Art Centre College of Design" by Scott Robertson, Khang Le, and Mike Yamada

Assessment Mapping:

Assessment	Outcome-1 - 5	Overall
Assignment	x	
Portfolio		x

Semester 3

Motion Graphics

Sub Code: xxxxxx	Credits: 4	Duration:

Objective:

The aim of this module is to introduce students to the art of creating graphics that use video and/or animation technology to create the illusion of motion. It will enable students to incorporate audio aspects in multimedia projects. The projects range from animation to video montage as a splash screen in broadcasting and to promote services and products in a broadcasting medium.

Indicative Content:

UNIT 1
- Introduction to Motion graphics, History of motion graphics, Different types of Motion Graphics
- 2D Motion Graphics, 3d Motion Graphics. Element and Principles of Motion Graphics Elements
- Principles of Graphic Design
- Typography For Motion Graphics
- Importance of typography for Motion graphics; Font Types - San Serif and Serif; Readability and Legibility; Creative Typography; Kinetic Typography.

UNIT-2
- Color Theory For Motion Graphics
- Importance of colour in Motion Graphics; Achromatic colour, Monochromatic colour, complementary colour, Split complementary colour, Triadic, Tetrad colours for Motion Graphics, Warm colour & Cool colour for Motion Graphics; Color Psychology for Motion Graphics.

UNIT-3
- 12 Principles of Animation

- Squash and Stretch; Anticipation; Staging, Straight ahead and pose to pose animation; Follow through and overlapping action, Slow out and slow in, Arcs; Secondary action, Timing, Exaggeration; Solid Drawing, Appeal.
- About motion trails, previewing animation, ghosting, types of ghosting, global preferences, frames to display steps before current frame, step size, frame range Animation

UNIT-4
- 2D Motion Graphics
- 2D Animation and Motion Graphics Cut-out animation .Blending modes and layer properties
- Principles of Key Frame Animation Sound Editing for Motion Graphics/Image & Video Files and Formats
- Importance of sound in Motion Graphics
- Image file Formats and there usage
- Video file formats
- Elements of Motion graphics Genre and Target Audience

UNIT 5
- Introduction to 2.5d Motion graphics
- Use of Camera 3D layers, Usage of Lights, Camera usage in creating Motion Graphics and Editing and its attributes,
- Camera Lens - Focal Length and Depth of Field; Aperture, F-Stop; Camera Movements
- Pan, Tilt, Dolly
- Video Editing. Stop motion used for Motion Graphics

OUTCOMES:

After successful completion of the module student shall be able to:

- Explore and integrate colour and design theories in the development of design and video.
- Explore the creative problem solving methods and research & referencing process suitable for animation and graphics.
- Interpret and respond to design briefs in the production of creative design solutions.

Suggested Reading/ References:

1. Austin Shaw, "Design for Motion, Fundamentals and Techniques of Motion Design", Chronicle Books ,2016.

2. B. Philip Meggs, & Rob Carter, "Typographic Design: Form and communication", Fourth Edition , John Wiley & Sons Publishers, 2006.

3. David Dabner, "Graphic Design School: A Foundation Course for Graphic Designers Working in Print", Moving Image and Digital Media. 5th Revised Edition. Thames & Hudson Ltd,2014.

4. John Halas, "Timing for Animation", Elsevier/Focal press, 2009.

5. John Wyver, "The Moving Image: International History of Film, Television and Video", Blackwell Publishers, 1989.

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

Visualisation for production(Animatics)		
Sub Code: xxxxxx	Credits:	Duration:

Objective:

The module develops drawing and design methodology and extends students' awareness and technical understanding of design and its relevance to art. This module creates the necessary ground work to compliment the theoretical and practical work done in other modules in 2nd year

Indicative Content:

UNIT-1
- Media Projects: Types of Projects
- Live Action & Animation; Short Film Duration, No of Location, No of Artists, Telefilm, Music Video; Documentary
- Non Fiction, Research on the Subject, Interview, Live Sound; Advertisements & PSA
- Target Audience, Duration, Advertisement appeal, Social cause;
- CG with Live Action
- CG element in Live action, Live Character in CG Environment

UNIT-2
- Genre: Story for the Genre
- Drama, Action, Thriller, Horror, Comedy and other Genres
- Characters for the Genre; Characters' appearance and behavior for different kind of Genres; Location for the Genre
- Style of Location for different kind of Genres; Time & Space
- World & Period of the Genre; Budget for the Genre
- Ingredients of the Budget, Budget for the Genre.

UNIT-3
- Elements of Story
- Theme & Plot, One line story, Story with a Message, Arch, Anti & Mini Plot; Situation Archetypes

- Situation, Symbolic, Color, Numbers Archetypes; 3 Dimensions of a Character Development
  1. Quirks and habits
  2. Back Story and Inner demons,
  3. Action and World View; Character's appearance
- Research for Character, Time & Space for Make-up and Costumes
- Synopsis & Story
- Story in a nut shell, Events in Linear Structure.

UNIT-4
- Screenwriting: 3 Act Structure
- Setup, Confrontation and Resolution; Hero's Journey
- Different stages of Hero's Journey
- Conflict & Cliché - Internal & External Conflicts, Natural & Para Normal Conflicts; Elements of Screenwriting
- Continuity, Foreshadowing, Flash Back, Time Travel
- Rise & Fall and Climax & Resolution
- Managing Conflicts, Rise and Fall, Emotional high point, Routine life again.

UNIT-5
- StoryBoard & Animatics: Scene, Shots & Thumbnail
- Location and Scene, Reference Thumbnail; Fair Storyboard
- Neat Sketch with Details of Shot
- Movements for Arrow
- Character Movement and Camera Movements
- Sound for Animatics
- Voice, Music, SFX for Animatics
- Final Animatics
- Visual Edit with Movement and Audio

OUTCOMES:

After successful completion of the module student shall be able to:

- Introduce a range of methods for researching and collecting visual imagery.

- Introducing a range of visual observation skills.

- Introducing a range of materials for communicating visually.

Suggested Reading/ References:

1. AROZTEGUI, C.; GARCÍA, R.; LÓPEZ, M, "Storyboarding and Animatics in Architectural Education. In", CONGRESS OF THE IBEROAMERICAN SOCIETY OF DIGITAL GRAPHICS (SI-GRADI), 13, São Paulo, 2009

2. BRIDGES, A.H.,"Animation Techniques in Architectural Visualization. In: Simposio Internacional sobre Diseño Asistido por Ordenador en la Arquitectura e Ingenieria Civil", IV, Bracelona, 1993.

3. DOWNING, F., "Remembrance and the design of place. College Station", Texas A&M University Press,2001.

4. MARK, E., "The Physical and Conceptual Assembly of Architectural Form", In: T. PENZ (ed.), Cinema & Architecture. London, BFI Press, 1997.

5. RAFI, A., "Computer Animation for Architectural Visualisation. Glasgow",Doctoral Thesis. Strathclyde University,1998.

Assessment Mapping:

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x

Animation II

Sub Code:	Credits:	Duration:

Objective:

By the end of the course, students are expected to have a strong grasp of the basic fundamentals of body dynamics, the ability to express personality through poses, and the technical know-how to animate inanimate objects. The overall objective is to prepare students for more advanced and intricate animation projects by honing their skills in both artistic expression and technical proficiency.

Indicative Content:

UNIT-1 • Helps students to understand the body dynamics at play while doing specific actions, such as Full Body Walk, Push and Pull.
UNIT-2 • Students will understand how to create strong poses with personality.
UNIT-3 • Students will be able to demonstrate technical understanding of constraints which will build a good foundation for upcoming modules.

OUTCOMES:

After successful completion of the module student shall be able to:

- Understanding of basic fundamentals of Body dynamics
- Understanding of Personality variations through poses
- Understanding of how inanimate objects can be animated

Suggested Reading/ References:

1. Complete Animation Course, Chris Patmore, Barrons Educational Series Inc,2015
2. The Art of DreamWorks Animation: Celebrating 20 Years of Art- Ramin Zahed (All)
3. Animation Survival Kit

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

Rigging & Skinning I

Sub Code: xxxxxx	Credits:	Duration:

Objective:

The Rigging & Skinning I module is designed to provide students with a foundational understanding of character rigging and skinning techniques, focusing on setups for biped characters and introducing fundamental concepts for more complex rigging tasks. The course spans three units, covering key aspects of character rigging and skinning

Indicative Content:

UNIT-1
• Understanding of a character Rig setup, Skinning and painting weights along with creating a Global control. Also use and understand deformers and rigid binding.
• Understanding Create Joint Setup & Controls for Cartoon Character
• Understanding to Create an FK/IK Hand setup, Finger Control and have to create an IK Leg setup
• Understanding Jaw and Eye Controls, Aim Constraints for eyes and a global control for the character.

UNIT-2
• Understanding Smooth Bind & Paint Weight the mesh to the Joints. This will attach the rig to the character mesh.
• Understanding of component editor for skinning.

UNIT-3
• To understand Human IK.
• Facial Rig setup and Facial Controllers

OUTCOMES:

After successful completion of the module student shall be able to:

● Understanding of placement of joint, and its Orientation, and FK/IK setup.
● Understanding Binding mesh with Joint and painting weight for proper skinning.
● Understanding complex facial rigs et up.

Suggested Reading/ References:

1. Learning Blender: A Hands-On Guide to Creating 3D Animated Characters – OliverVillar
2. Rig it Right! Maya Animation Rigging Concepts (Computers and People) by Tina O'Hailey (Author)
3. Body Language: Advanced 3D Character Rigging – EricAllen
4. The Art of Rigging (A Definitive Guide to Character Technical Direction with Alias Maya, Volume 1)   – Kiaran Ritchie

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

Photography And Cinematography		
Sub Code: xxxxxx	Credits:	Duration:

Objective:

To consider the relationship between what is being communicated and target audience/viewer. To broaden critical and contextual awareness of a Photography and video production discipline in relation to the subject matter being explored

Indicative Content:

UNIT-1
● Introduction to Film Production ● Basic Principles of Still Camera ● Basic Principles of motion camera ● Invention of Cinematography ● Camera and Lenses ● Basic Composition ● Target Audience
UNIT-2 ● Introduction to Photography ● Overview of types of photography ● Exposure - Shutter - Aperture – ISO ● Camera Operations ● Fundamentals of Light

	• Reading & Analysis of Photography – Focusing System – Composition – Visual design Elements & principles – Lenses
UNIT- 3	• Types of shots, Camera angles, Camera movement • Pan, Tilt, track and trolley • Various stocks • Lab Standards - Analog Vs Digital Image • Compatibility and Aspect Ratio
UNIT- 4 Concept Art	• Lighting, Properties of Light • Factors that influence lighting needs • Light Meter - Measuring the light - Lighting Styles • Types of Lights –Functions of Lights - Key light – Fill Light – Back Light – Lighting Accessories – Equipments - Realistic Lighting Moods – Filters – Lighting Practices – creating soft light – Lighting the close – up – Handling reflective surfaces

OUTCOMES:

After successful completion of the module student shall be able to:

- Develop an understanding of the synthesis between theory and practice within their chosen subject area and demonstrate this through their solutions to assignments.
- Explore the relationship between target audience/viewer and what is being communicated.
- Analyse and evaluate methods of communication and appropriateness of media within a specialist area and describe basic skills

Reading and Reference Materials:

- Mascelli Silman, V.Joseph, "The Five C's Of Cinematography", Silman-James Press, 1965. 5. S Ganesh,
- "Hand Book Of Media Communication And Public Relations", Radha Publication, 2007
- Gorham Kindem, Phd, & Robert B. Musburger Phd, "Introduction To Media Production", Fourth Edition: Focal Press, 2009.

Assessment Mapping:

Assessment	Outcome-1 - 4	Outcome-5
Assignment	x	
Portfolio		x

Semester 4

3D For Visual Effects

Sub Code: xxxxxx	Credits:	Duration:

Objective:

To extend students' use of software to build a body of work in their specialised area. Advance student's ability to independently plan & develop strategies for creating output required for their chosen field of study Develop an understanding of the principles and processes used to create successful output in chosen specialised area Visual language, theories and techniques applicable to this field will also be explored.

Indicative Content:

UNIT-1
- 3D Modeling - Curve tools - CV curve tool, EP curve tool Surface - Loft, Plannar, Revolve, Birail, Extrude
- NURBS Primitives, Polygons Primitives, NURBS to Polygons conversation,
- Polygons to NURBS - Polygon Primitives - Mesh tools - Boolean, Fill hole, Create Polygon, Insert Edge loop, multi-cut - Porject Curve on Mesh, Split Mesh with projected curve - Bridge, Bevel, Poly extrude, Merge - Weld, Target weld, Soften edge, harden edge - Smooth, Reduce, Mirror Cut, Mirror Geometry
- Cleanup, Reducing the topology with different tools

UNIT-2
- Basic Materials - Lambert, Blin, Phong, Phong E, Anisotropic, Arnold Materials - Understanding - Diffuse - Specular - Transmission - Subsurface - Coat - Emission, 3D Texturing
- Introduction to UV mapping and projections, UV Mapping - Cylindrical - Planar - Spherical - Automatic, Contour Stretch UV Editor tools - Cut tools - Sew tools Transformation tools on UV- Projected image - display types, Advance cut tools using UV, Edges, Face, Vertex, Shell UV Unfold - Cut UV edges, 3D UV grab tool
- Exporting and importing UV to Photoshop or any Image editing software, bump map - normal map - displacement/height map.

UNIT-3
- 3D Lighting-Introduction to Maya default lighting -Product single lighting - Single point lighting - Spot light or directional light Environment lighting - Directional lighting spot lighting using photons and cluster lighting
- Indoor lighting using different light sources with depth map shadows, Rasterize - Raytrace - Ray Casting shadows Studio lighting

●	3 Point lighting advance Arnold lighting - Indirect lighting - HDRI lighting environment - skydome physical sky.
●	Using Chrome Ball And Grey Ball

UNIT-4
- Solving Exporting Camera in 3D
- Rendering - Introduction to Render Engines - Render Layers
- Rendering options - Production settings and quality, Raytrace Depth, Sampling, Adaptive Sampling, Environment, Motion Blur
- Creating AOV's, Render passes - Ambient Occlusion - diffuse - specular & Multi Render passes for composting.

OUTCOMES:

After successful completion of the module student shall be able to:

- Demonstrate a range of research skills, methodologies and understanding used in the production of their specialised area of study.

- Explore media and techniques in the definition and expression of ideas and apply cognitive learning to production of a body of work.

- Demonstrate significant understanding of different techniques and critically evaluate and apply them when creating work of their own.

Suggested Reading/ References:

- 1. Edward R. Tufte, " Visual Explanations: Images and Quantities", Evidence and Narrative. Edition. Graphics Press,1997.

- 2. Kelly L. Murdock, "Autodesk Maya 2018 Basics Guide", SDC Publications, 2018. 3. Lee Lanier , "Advanced Maya Texturing and Lighting", Third Edition, SYBEX A Wiey Brand, 2015.

- 4. Sham Tickoo Mark Baskinger, "Autodesk Maya 2018, A Comprehensive Guide", 10th Edition, 2018.

- 5. Susan Zwerman, "The Visual Effects Producer: Understanding the Art and Business of VFX", Routledge; 1 edition ,28 September 2009

Assessment Mapping:

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x

3D Matte Painting

Sub Code: xxxxxx	Credits:	Duration:

Objective:

Equip students with the abilities and information required to create realistic, captivating 3D matte paintings for use in movies and other digital media. By gaining a thorough understanding of the methods and resources used to merge 3D objects with painted textures, participants will be able to create virtual worlds that appear natural in live-action video**.**

Indicative Content:

UNIT-1 ● Creating simple 3D environments for matte painting ● Understanding perspective and camera matching ● Integrating 3D elements into matte paintings
UNIT-2 ● set extension in 3D ● Solving a camera and create an matte painting in 3D Scene ● Set Extension From 2D to 3D
UNIT-3 ● Advanced rendering techniques (V-Ray, Arnold) ● Real-time rendering ● Creating AOV's, Render passes - Ambient Occlusion - diffuse - specular & Multi Render passes for composting in different formats (exr,dpx,tiff,tga)

OUTCOMES:

After successful completion of the module student shall be able to:

● Acquire proficiency in the advanced techniques of 3D matte painting, including digital painting, texture creation, and the integration of 3D elements.
● Develop digital painting skills to create detailed and realistic textures for matte paintings, considering factors like lighting, shadows, and colour grading.

Suggested Reading/ References:

1. "The Art of Matte Painting" by David B. Mattingly

2.

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	

Portfolio		x

Body Mechanics I

Sub Code:	Credits:	Duration: 6 weeks

Objective:

The outcomes of the course include a deep understanding of both basic and in-depth body dynamics, the ability to identify the transfer of weight in biped characters, knowledge of using props and weapons for game cycles, and the practical skill of performing action as live reference for animation assignments. By the end of the course, students should be well-equipped to tackle complex character animations with a focus on realistic and dynamic body mechanics.

Indicative Content:

UNIT-1
• Learning how to break-down an animation into golden and key-poses. Creating in-between frames from the key poses and complete the animation.
• Understand how to balance weight, the body dynamics behind lifting a heavy object, and throwing the object.

UNIT-2
• Helping understand how to break down loop able actions. Students also need to make sure that the animation and poses are valid from all points of view.
• Strengthen knowledge on posing and breaking down animation.

UNIT-3
• To reinforce the fundamentals of Body dynamics the concept of weight but with the help of their live video reference.
• To understand the body dynamics at play while doing specific actions, such as simple Lifting a heavy object, and throwing an object, jump cycle, Idle, or run cycle (for gaming)

OUTCOMES:

After successful completion of the module student shall be able to:

- Understand basic and in-depth fundamentals of body dynamics.
- How to identify transfer of weight in biped.
- Understand usages of props and weapons for game cycles.
- Performance Acting as live reference for the animation assignment.

Suggested Reading/ References:

3. Complete Animation Course, Chris Patmore, Barrons Educational Series Inc,2015
4. The Art of DreamWorks Animation: Celebrating 20 Years of Art- Ramin Zahed (All)
5. Animation Survival Kit

Assessment Mapping:

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x

Rigging & Skinning II

Sub Code: xxxxxx	Credits:	Duration:

Objective:

The objective of the module include a thorough understanding of joint placement, orientation, and FK/IK setups, proficiency in binding the mesh with joints and painting weights for proper skinning, and the ability to create complex setups such as spine setups for flying characters and GUI for facial controls. By the end of the course, students should be well-equipped to handle intricate character rigging and skinning tasks for a variety of character designs.

Indicative Content:

UNIT-1
• Understanding of a character Rig setup, Skinning and painting weights along with creating a Global control. Also use and understand deformers and rigid binding.
• Understanding Create Joint Setup & Controls for Quadruped and creatures
• Understanding to Create an FK/IK Hand setup,
• Understanding tail Controls (Dynamic), Aim Constraints for eyes and a global control for the character.

UNIT-2
• Understanding Smooth Bind & Paint Weight the mesh to the Joints. This will attach the rig to the character mesh.
• Understanding of component editor for skinning.

UNIT-3
• To understand Human IK.
• Facial Rig setup and Facial Controllers

OUTCOMES:

After successful completion of the module student shall be able to:

- Understanding of placement of joint, and its Orientation, and FK/IK setup.
- Understanding Binding mesh with Joint and painting weight for proper skinning.
- Understanding how to Create a Spine Setup for flying character and GUI for face.

Suggested Reading/ References:

1. Learning Blender: A Hands-On Guide to Creating 3D Animated Characters – OliverVillar
2. Rig it Right! Maya Animation Rigging Concepts (Computers and People) by Tina O'Hailey (Author)
3. Body Language: Advanced 3D Character Rigging – EricAllen
4. The Art of Rigging (A Definitive Guide to Character Technical Direction with Alias Maya, Volume 1)   – Kiaran Ritchie

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

Preproduction		
Sub Code: xxxxxx	Credits:	Duration:

Objective:

Equip students with the foundational knowledge, skills, and methodologies essential for the planning and preparation phase of creative projects, particularly in the context of film, television, animation, or other media productions.

Indicative Content:

UNIT-1
● Introduction to storytelling
● Types of stories – discussion of convention storytelling
● Basics of film language: Sequence , Scene, shot, Frame, Genre, Narrative, Cinematography, Types of shots, Camera angles, Camera movements, Editing, Special effects, lighting, sound
● Storyboard : Introduction of storyboard
● Thumbnail sketches, Styles of story board, Story board format
UNIT-2
● Director as "Captain of the ship" – Evolution of the director – Role of the director – Responsibilities
● understanding the film – language – filmic space and filmic time
● The basic UNITs – shots, scene and sequences – interlocking roles of crew members

UNIT-3 Story Board
● The organic structure of screenplay, Idea, Theme, Plot, Character – three dimension of Character
● Three act structure – conflict – different types of conflict – crisis – climax resolution
● Various stages of screenplay

UNIT-4
● Advantages of Storyboard in Animation, Anatomy of a Storyboard, Thumbnail Storyboard, Preparing Storyboards using Digital software.
● Advanced Storyboard Techniques, Various Camera Shots and Camera Moves and their meaning, Transitions, Aspects of the story board.

OUTCOMES:

After successful completion of the module student shall be able to:

- Understanding Script, Script Elements and Scene Heading, Action, Characters. Dialogue.
- Understanding Page Elements and Composition, Projecting figures in Deep space, Framing and Composition, Perspective and Camera.
- Understanding how to Create a Storyboard in Animation, Anatomy of a Storyboard, Thumbnail Storyboard.

Suggested Reading/ References:

1. The Animation Bible: A Practical Guide to the Art of Animating from Flipbooks to Flash [Paperback], Maureen Furniss
2. Drawn to Life: 20 Golden Years of Disney Master Classes: Volume 1: The Walt Stanchfield Lectures [Paperback], Walt Stanchfield
3. Facial Expressions: A Visual Reference for Artists, Mark Simon, Publisher: Watson Guptill, ISBN-10: 0823016714, ISBN-13: 978-0823016716   – Kiaran Ritchie

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

Semester 5

Compositing I

Sub Code: xxxxxx	Credits:	Duration:

Objective:

The objective of the module include a thorough understanding compositing and its role in the post-production process, introduce the concept of layering and blending visual elements, and to teach the concept of layers and their role in compositing.

Indicative Content:

UNIT-1
- Introduction to compositing
- Introducing node based compositing
- Advantages of Nuke
- Nuke interface-Menu Tab and its uses
- How to navigate using Viewer - Properties Bin

UNIT-2
- Tools - Merging multiple layers/Images
- Addmix – Node graph as basic building blocks of any compositing
- Introduction to RotoScopy
- Single frame Roto
- Usage of Subtract Roto

UNIT-3
- Purpose of Segmenting Roto for a Character
- How to Segment a Character Roto
- Usage of Feather in Roto
- Open spline for hair Roto

UNIT-4
- Introduction to 2d Tracking
- One Point Track using position
- Two point track using position and rotation

OUTCOMES:

After successful completion of the module student shall be able to:

- Demonstrate a clear understanding of the fundamental principles of compositing, including layering, blending, and the overall post-production workflow
- Develop proficient rotoscoping skills, allowing for the precise isolation and manipulation of specific elements within a scene.
- Build a portfolio of project work showcasing the application of compositing and rotoscopy skills to real-world scenarios.

Suggested Reading/ References:

1. Eran Dinur, "The Filmmaker's Guide to Visual Effects: The Art and Techniques of VFX for Directors, Producers, Editors and Cinematographers", Routledge 1 edition, 31 May 2017.
2. Lee Lanier, "Digital Compositing with Nuke",Routledge,2012.

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

Pantomime		
Sub Code:	Credits:	Duration:

Objective:

The objective of the Preproduction module is to empower students with essential skills for animation preproduction. Through in-depth exploration of screenwriting, concept art, storyboarding, character design, and layout, students will master the nuances of crafting engaging scripts, creating captivating visuals, and designing effective storyboards. The course aims to cultivate a practical understanding of industry standards, enabling students to contribute proficiently to the animation preproduction phase. By the end, students will possess the theoretical knowledge and practical expertise necessary for success in key facets of animation development, positioning them as adept professionals ready for the challenges of the industry.

Indicative Content:

UNIT-1
• The Pantomime module is a good launch pad for acting in animation where they do not have to
deal with the details of facial animation and lip-sync. Students will focus more on body mechanics
before they go on too much complex modules later on.
•Pantomime is a dramatic act, of mime, in which performers express meaning through gestures.
More focus will be given to the body mechanics and gestures of the character.

UNIT-2
• Students will learn the technique of conveying emotions, actions, feelings, etc., by gestures without speech, so all acting is done through the body of the character while staying away from emotion which adds another level of complexity.

OUTCOMES:

After successful completion of the module student shall be able to:

- Understanding body language.
- Clear understanding of body mechanics.
- Convey emotion through gestures.

Suggested Reading/ References:

1. Cartoon Animation - Preston Blair
2. Character Animation Crash Course – Eric Goldberg

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

Dynamics And Fx		
Sub Code:	Credits:	Duration:

Objective:

The objective of the Preproduction module is to empower students and establish a solid understanding of the basic principles and terminology of FX and dynamics in the context of visual effects, dive deep into fluid dynamics simulations, exploring advanced techniques for simulating liquids, smoke, and fire, the students will develop expertise in creating dynamic simulations for cloth and soft body deformations

Indicative Content:

UNIT-1
- Overview of FX and dynamics in visual effects   - Introduction to particle systems and simulations   - Creating basic particle effects for various scenarios
UNIT-2
- Introduction to fluid simulations and dynamics   - Simulating liquids, smoke, and fire   - Understanding viscosity, turbulence, and buoyancy
UNIT-3
- Cloth simulations for realistic fabric movement   - Soft body dynamics for deformable objects   - Integrating cloth and soft body simulations into visual effects scenes
UNIT-4
- Handling dynamic interactions between various elements   - Collision detection and response in simulations

- Integrating particle, fluid, cloth, and rigid body dynamics in a single scene
- Strategies for optimising and enhancing dynamic simulations

OUTCOMES:

After successful completion of the module student shall be able to:

- Understand the foundational principles of FX and dynamics in visual effects.
- Design and implement particle systems for various visual effects scenarios
- Apply fluid dynamics principles to simulate liquids, smoke, and fire realistically
- Manage dynamic interactions between different elements and master collision detection and response.

Assessment Mapping:

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x

Lighting and Rendering

Sub Code:	Credits:	Duration: 4 weeks

Objective:

The Lighting and Rendering course aims to provide students with a comprehensive understanding and practical skills in the art and science of lighting and rendering for computer-generated environments. Over a four-week duration, the course delves into the fundamentals of lighting, covering topics such as direct light source setup, modification of lights using the Light Editor, shadow adjustments, and referencing lighting techniques in Maya.

Indicative Content:

UNIT-1
- Basics of Lighting
- Set up a direct light source
- Create, group, and modify lights in your scene with the Light Editor
- Adjust lighting
- Shadow in Maya
- Lighting Reference

UNIT-2
- Setup and real-world lighting

- Creature portrait lighting, part 1
- Beauty lighting for cg product shots, part 1
- Environmental lighting for action shots, part 1

OUTCOMES:

After successful completion of the module student shall be able to:

- Lighting any type of CG Environment
- Learn how to render and use different passes
- How to composite the scene with render passes

Suggested Reading/ References:

1. *Digital lighting and rendering.*
2. Light for Visual Artists, 2nd edition
3. Light science and magic 5th edition.

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

Semester 6

Compositing II

Sub Code: xxxxxx	Credits:	Duration:

Objective:

The Compositing II course aims to provide students with a comprehensive understanding and practical skills o consider the relationship between what is being communicated and target audience/viewer. To broaden critical and contextual awareness of a video production discipline in relation to the subject matter being explored

Indicative Content:

UNIT-1
- Two point track using position and rotation
- Four point Track using perspective
- Stabilising a footage with the help of tracker
- Track rigid objects and objects using- Planar Tracker
- Deaging (Frequency Separation)
- Day to Night conversion
- Smart Vector
- Prep And Paint

UNIT-2
- Introduction to Keying
- Purpose of blue/green screen
- How to use keyer
- How to use Primatte
- How to use Keylight
- How to use IBK Color and Gizmo
- Colour Correction
- Grade Node
- Hue Correct & Hue Shift
- Log to Linear.

UNIT-3
- Introducing 3D space in Nuke
- Introducing 3D camera tracking
- Purpose of 3D camera
- Usage of scene node in 3D environment
- How to import 3D objects
- 3D lighting in Nuke-Applying texture in Nuke-3D to 2D render conversion using scanline render.
- Generating Point Cloud
- Introduction To Model Builder

UNIT-4
- Introduction to AOV workflow within Nuke
- Importing and organising AOV passes
- Strategies for managing multiple passes efficiently - using AOV passes to isolate specific elements (diffuse, specular, etc.)
- Applying AOV passes to enhance lighting and shading
- Creating physically accurate composites using AOV passes
- Techniques for isolating and refining specific areas

OUTCOMES:

- Develop advanced understanding of concepts, methods, and tools used in the production of generating imagery/images.
- Encourage students to independently study and critically analyse the process of design and construct elements to be used in their specialised area of study.
- Apply design principles to produce professional quality output

Suggested Reading/ References:

1. Eran Dinur, "The Filmmaker's Guide to Visual Effects: The Art and Techniques of VFX for Directors, Producers, Editors and Cinematographers", Routledge 1 edition, 31 May 2017.
2. Jeff Foster, "The Green Screen Handbook: Real-World Production Techniques", Routledge, 2014.
3. Lee Lanier, "Digital Compositing with Nuke", Routledge, 2012.
4. Ron Ganbar, "Nuke 101: Professional Compositing and Visual Effects", Peachpit Press 2011.
5. Tim Dobbert, "Matchmoving: The Invisible Art of Camera Tracking", Sybex, 2005.

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

Facial Acting

Sub Code:	Credits:	Duration:

Objective:

The Facial Acting module aims to provide students with a comprehensive understanding of animating facial expressions and lip-syncing. Spanning two units, the course focuses on breaking down facial anatomy, identifying muscles associated with expressions, and refining the animation process to create impactful and realistic character performances.

Indicative Content:

UNIT-1
• Learn different parts of the face.

• Identifying different muscles associated with making an expression.
• Learn how to perform lip-syncing
UNIT-2
• How to set up a face library for expression change, and mouth shapes.
• Refining Blocking for expression change, and mouth shapes.
• Polish, correct the animation.
• One planned single-character shot with audio.
• This will also be a key exercise on how to introduce your shot to a Supervisor/Director before playing a shot to them.

OUTCOMES:

After successful completion of the module student shall be able to:

- Understanding how to lip-sync is done.
- Clear planning of shots from start to finish.
- Experiment and understand camera angles.
- Improvement in performance acting with the help of a rigged character.

Assessment Mapping:

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x

Editing And Colour Grading

Sub Code:	Credits:	Duration:

Objective:

The objective of the module is to establish a strong foundation in editing principles, terminology. Students will be able to demonstrate proficiency in basic editing tasks, understand the principles of sequencing, and identify key editing terminology creating sequences that effectively convey narrative, emotion, and visual continuity. Can understand the fundamental concepts of colour grading, including colour correction and colour enhancement.

Indicative Content:

UNIT-1
• Role of editing in storytelling and communication.
• Understanding the basic principles of film editing.

●	Learning essential editing terminology (cuts, transitions, shots - Techniques for assembling shots to create a sequence

UNIT-2
- Importing media: video, audio, and images - Understanding project settings and sequences - Navigating the timeline: adding, moving, and trimming clips
- Using the Razor tool for precise cuts - Arranging and rearranging clips on the timeline
- Applying video and audio transitions - Introduction to basic video effects and adjustments - Creating simple text titles and graphics - Synchronizing and editing multi-camera footage - Switching between different camera angles
- Introduction to keyframes for animation and motion effects - Applying motion to clips, images, and text - Creating basic animations using position, scale, and rotation.

UNIT-3
- Basic colour correction techniques
- Adjusting exposure, contrast, and colour balance
- Introduction to colour grading for mood and style

OUTCOMES:

After successful completion of the module student shall be able to:

- Develop the ability to critically analyse footage and identify areas for improvement, employing problem-solving skills to address challenges.

- Deliver professional-quality projects, showcasing a refined understanding of visual storytelling and a keen eye for aesthetic detail.

- Implement efficient workflow practices, managing media effectively, and optimising the process for time and resource efficiency.

Assessment Mapping:

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x

Acting for Animation

Sub Code:	Credits:	Duration:

Objective:

The objective of the module include a thorough understanding of lip-syncing techniques, clear planning and execution of shots, setting up shots to production studio levels, and improvement in performance acting using rigged characters. By the end of the course,

students should be well-prepared to create dynamic and engaging character animations that effectively convey emotions and interactions.

Indicative Content:

UNIT-1 • Learn how to perform lip-syncing. • Identifying good audio for animation. Prepare a storyboard, capture live acting, and assemble the set. Set the animation frame rate, screen resolution, and camera settings. • Acting theories (how to empower animators to become character animators)
UNIT-2 • How to set up effective camera angles appropriate to the short. The animation has to match the camera angle in the captured video performance. Block character animation • Refining Blocking and animating the characters. • Polish, correct the animation. • One planned single-character shot with audio (eg, monologue)
UNIT-3 • Types of nonverbal communication in which physical behaviours, as opposed to words, are used to express or convey information. • Different perspectives and a point of view of an Animation Supervisor/Director on how a shot should be approached. • This will also be a key exercise on how to introduce your shot to a Supervisor/Director before playing a shot to them. • One planned double-character shot with audio (dialogue showing acting and reacting between two characters)

OUTCOMES:

After successful completion of the module student shall be able to:

- Understanding how to lip-sync is done.
- Clear planning of shots from start to finish.
- Setting up a shot to production studio level.
- Improvement in performance acting with the help of a rigged character.

Suggested Reading/ References:

1. Directing the Story: Professional Storytelling and Storyboarding Techniques for Live Action and Animation by Francis Glebas
2. The Animation Book: A Complete Guide to Animated Filmmaking-From Flip-Books to Sound Cartoons to 3-D Animation" by Kit Laybourne.
3. Acting for Animators: 4th Edition Introducing Autodesk Maya
4. Cartoon Character Animation with Maya: Mastering the Art of Exaggerated Animation

Assessment Mapping:

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x

Post-production		
Sub Code: xxxxxx	Credits:	Duration:

Objective:

The Post-production course aims to empower students with comprehensive skills in the dynamic field of post-production, covering essential aspects such as compositing, color correction, 2D and 3D animation, tracking, expressions, rendering, and advanced video editing techniques. Over the course duration, students will explore industry-standard tools and software, gaining proficiency in Adobe After Effects and Adobe Premiere Pr

Indicative Content:

UNIT-1 Introduction to Compositing
• Introduction to motion graphics - Video montage Video Titling Logo Animation. Visual Effects (VFX) and other applications. Introduction to Adobe After Effects - History of VFX. Planning and documentation for VFX. -Understanding the workspace - Project window- Project Settings New Composition. Composition Settings. Nesting Compositions in a single file, Timeline Layering concept in After Effects, Adding Composition and Footage to Timeline, Timeline Options-Work Area, Current Time/Framerate - Extra Switches. Monitor. Magnification. Safe Frame. Editing in Monitor Window (Setting In/Out Points) Taking Snapshot. Loading Last Snapshot. Colour Channels. Resolution (Down Sampling Factor) Region of Interest. Toggle Transparency - Wireframe Mode - 3d View Popup -Pixel Aspect ratio correction.

UNIT-2 Compositing in 2D and 3D, Chroma, Paint and Rotoscope,
• Animating Images and Text to Sound. To learn how to animate images and text Footage Options in Timeline Effects, Transform Position Scale Rotate, Anchor Point, Opacity Adding Keys Adjusting Keys, setting in and Out point for the footage, Adjusting Speed of the Animation, Parenting Layers, Creating Layers Solid Text Light Camera. Null Object, Adjustment Layer, Blending Modes, Sound Breakdown - Masking. To understand Masking, Masking / Alpha Channel, Interpolation - Compositing in 2D Space: Creating Composites in 2D Space, Creating multiple composites with sound, Creating multiple composites using video with alpha channel, Using Null and Adjustment Layer - Compositing in 3D Space, Understanding 3d Environment in After Effects, Camera Light Coordinates, Animating Footage in 3d space, Creating Multiple Composites in 3d space, Advanced Lighting Shadows, Environmental Lighting, Advanced Camera, Depth of field, Camera Shake, Compositing in 3D Space, To understand 3D post and Z- Depth, Importing 3d data into After Effects, Applying Filters

UNIT-3 Colour, Camera and Tracking, Expressions and Rendering
• Stabilization/Colour Correction. Colour manipulation tools, Filters, Colour Manipulation using Blending Mode, and Layer Blending. Advanced Colour Correction Creating Mood for the scene Tinting Footage, Exposure Adjustments, Brightness, and Contrast. Learning to stabilize camera shake and jitter, Analysing Footage for a shake, Using stabilize option - Camera Tracking: Tracking Concept, using footage elements in tracking, 2D Tracking, Using the Data of Tracking. 3D Tracking, Constraints of 3D Tracking, Using the Data of Tracking, Advanced Tracking Techniques.
Using Expression in After Effects, Advantages of Using Expressions Wiggle Script, Controlling the animation of objects using a script, Advanced Expression for animation - Rendering: Exporting video Clips, Exporting Single Frame of the animation, Exporting part of the animation. Batch rendering, Creating Batch Render.

UNIT-4 The Concept of Editing, Classic rules of film cutting & EDITING TECHNIQUES.
Introduction Short History of Video Editing Technology, Slice and Splice, Electronic Editing, Digital Editing, Time code Editing, Computerized video editing, Small Format Editing, Nonlinear and Digital Effect Editing, Basis of Digital editing process, Time codes, SMPTE, Non-linear editing, Online editing.
Editing Process and Tools - Offline editing, EDL, on-air editing, Formats, Analog Video Format, Digital Video Format, Editing Tools, Dedicated editing machines, Smoke, Quantal, FCP, and Avid Software-based Editing Solutions.
Digital Editing Techniques, Editing with Adobe Premiere - Introduction, Setup, Interface, capturing media in Premiere Pro, organizing your media, Monitors, Editing - Effects, Adobe Title Designer, Working with Audio, Exporting, Editing Exercises, Music videos, Promos, Commercials, Trailer, Sound Editing Using Adobe Sound Booth.

SOUND EFFECTS MUSIC AND FOLEYS – Dialogue. Dialogue writing. Recording of dialogue, The spoken language Dialect, and Accent. Voice acting/ modulation. Cast, Scratch Audio Track, Shooting the Storyboard, Slugging the Storyboard, Animatics.

OUTCOMES:

After successful completion of the module student shall be able to:

Familiarise the tools and techniques to create standard VFX shots

Learn Problem-solving techniques to rectify the errors during compositing.
Create content for broadcast, feature film, and web animation.

Suggested Reading/ References:

1. Digital Lighting & Rendering, Second Edition by Jeremy Birn
2. Lighting and Rendering in Maya: Lights and Shadows by Jeremy Birn
3. Compositing Digital Images, T. Porter and T. Duff, Proceedings of SIGGRAPH '84, 18 (1984) 4 The Art and Science of Digital Compositing, Ron Brinkmann

Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x