



# Bachelors in Game Art and Animation

Duration 4 Years (8 Semesters)

160 Credits

## Bachelors in Game Art and Animation

SEMESTER 1											
S. No	Course Code	Course Title	Periods per Week				Credits	Marks			End Exam W/P/J
			L	T	P	Total		Int	Ext	Total	
1		Drawing Fundamentals, I	1	0	3	4	4				P
2		Digital Art	0	0	4	4	4				P
3		Classical animation (2D Animation)	1	0	3	4	4				P
4		Design Fundamentals I	2	0	0	2	2				T
5		<b>English Comm. I</b>	2	0	0	2	2				T
6		Computer fundamentals	1	0	1	2	2				P
7		<b>Environmental Studies</b>	2	0	0	2	2				T
		<b>Total</b>	<b>9</b>	<b>0</b>	<b>11</b>	<b>20</b>	<b>20</b>				

SEMESTER 2											
S. No	Course Code	Course Title	Periods per Week				Credits	Marks			End Exam W/P/J
			L	T	P	Total		Int	Ext	Total	
1		Graphic Design	1	0	3	4	4				P
2		Digital Modeling	1	0	3	4	4				P
3		Animation I(Principles)	1	0	3	4	4				P
4		Design Fundamentals II	2	0	0	2	2				T
5		Drawing Fundamentals	0	0	2	2	2				P
6		<b>English Communication II</b>	2	0	0	2	2				T
7		<b>Indian Constitution</b>	2	0	0	2	2				T
		<b>Total</b>	<b>9</b>	<b>0</b>	<b>11</b>	<b>20</b>	<b>20</b>				

SEMESTER 3											
S. No	Course Code	Course Title	Periods per Week				Credits	Marks			End Exam
			L	T	P	Total		Int	Ext	Total	W/P/J
1		Digital Sculpting	0	0	4	4	4				P
2		Hard Surface Modeling	0	0	4	4	4				P
3		Animation II	1	0	3	4	4				P
4		Rigging and Skinning I	0	0	2	2	2				P
5		Concept Art	0	0	2	2	2				P
6		Elective	0	0	1	1	2				P
7		MOOC	0	0	2	2	2				P
		<b>Total</b>	<b>3</b>	<b>0</b>	<b>16</b>	<b>19</b>	<b>20</b>				

SEMESTER 4											
S. No	Course Code	Course Title	Periods per Week				Credits	Marks			End Exam
			L	T	P	Total		Int	Ext	Total	W/P/J
1		Organic Modelling, I	0	0	4	4	4				P
2		Environment Modelling, I	0	0	4	4	4				P
3		Body Mechanics	1	0	3	4	4				P
4		Rigging and Skinning II	0	0	2	2	2				P
5		Preproduction	0	0	2	2	2				P
6		Elective	0	0	2	2	2				P
7		MOOC	0	0	2	2	2				P
		<b>Total</b>	<b>1</b>	<b>0</b>	<b>19</b>	<b>20</b>	<b>20</b>				

SEMESTER 5											
S. No	Course Code	Course Title	Periods per Week				Credits	Marks			End Exam W/P/J
			L	T	P	Total		Int	Ext	Total	
1		Hard Surface Modelling II	1	0	3	4	4				P
2		Pantomime	0	0	4	4	4				P
3		Environment Modelling II	0	0	4	4	4				P
4		Body Mechanics II	0	0	2	2	2				P
5		Lighting and Rendering	0	0	2	2	2				P
6		Elective	1	0	1	2	2				P
7		MOOC	0	0	2	2	2				P
		<b>Total</b>	<b>2</b>	<b>0</b>	<b>18</b>	<b>20</b>	<b>20</b>				

SEMESTER 6											
S. No	Course Code	Course Title	Periods per Week				Credits	Marks			End Exam W/P/J
			L	T	P	Total		Int	Ext	Total	
1		Organic Modelling II	1	0	3	4	4				P
2		Facial Acting	0	0	4	4	4				P
3		Acting for Animation	1	0	3	4	4				P
4		Post Production	0	0	2	2	2				p
5		AR/VR	0	0	2	2	2				P
6		Elective	1	0	1	2	2				P
7		MOOC (Massive online open courses)	2	0	0	2	2				p
		<b>Total</b>	<b>6</b>	<b>0</b>	<b>14</b>	<b>20</b>	<b>20</b>				

SEMESTER 7											
S. No	Course Code	Course Title	Periods per Week				Credits	Marks			End Exam
			L	T	P	Total		Int	Ext	Total	W/P/J
1		Specialization Project	0	0	10	10	10				P/J
2		Animation Project Management	0	0	2	2	2				T
3		Portfolio development	0	0	8	8	8				P
		<b>Total</b>	<b>2</b>	<b>0</b>	<b>18</b>	<b>20</b>	<b>20</b>				

SEMESTER 8											
S. No	Course Code	Course Title	Periods per Week				Credits	Marks			End Exam
			L	T	P	Total		Int	Ext	Total	W/P/J
1		Internship	0	0	20	20	20				P/J
		<b>Total</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>20</b>	<b>20</b>				

# Semester 1

<b>Drawing Fundamentals 1</b>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1 Introduction to Drawing and Line</b></p> <ul style="list-style-type: none"> <li>• Overview of different types of lines and their use in art</li> <li>• Exercises in line quality and weight</li> <li>• Introduction to the concept of contour drawing</li> <li>• Basic exercises in contour drawing</li> </ul>
<p><b>UNIT-2 Shape and Form</b></p> <ul style="list-style-type: none"> <li>• Introduction to the principles of shape and form in drawing</li> <li>• Basic exercises in creating shapes and forms</li> <li>• Exercises in shading and creating the illusion of depth</li> </ul>
<p><b>UNIT-3 Value and Texture</b></p> <ul style="list-style-type: none"> <li>• Introduction to the use of value and texture in drawing</li> <li>• Exercises in creating different types of texture</li> <li>• Basic exercises in using value to create form and depth</li> </ul>
<p><b>UNIT-4 Perspective, Proportion, and Composition</b></p> <ul style="list-style-type: none"> <li>• Introduction to the principles of perspective and proportion</li> <li>• Basic exercises in one-point and two-point perspective</li> <li>• Exercises in creating proportional figures and objects</li> <li>• Introduction to the principles of composition in drawing</li> <li>• Basic exercises in creating dynamic compositions</li> <li>• Critique of student work and discussion of different approaches to drawing</li> </ul>

**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
<b>Assignment</b>	x	
<b>Portfolio</b>		x

<h1>Digital Art</h1>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Introduction Photoshop and its tools and interface</li> <li>• Photo restoration using Clone stamp and healing patch tools</li> <li>• How to create basic vector art using Photoshop tools</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• Understanding of FX blending modes and masking.</li> <li>• Double exposure and study of layers in Photoshop.</li> <li>• Photo manipulation.</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• Basic understanding of the material study</li> <li>• Hand-drawn study of basic materials on complex shapes.</li> <li>• Painting a still life keeping in mind lighting.</li> </ul>
<p><b>UNIT-4</b></p> <ul style="list-style-type: none"> <li>• How to paint a portrait</li> <li>• How to paint an environment</li> <li>• Introduction to matte painting</li> </ul>

**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

<h1>Classical Animation</h1>		
Sub Code:	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Students will learn to bounce balls and understand the principles of stretch and squash.</li> <li>• Students will learn a ball bounce with a different weight.</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• Students will learn ball bounce with a tail attached to it.</li> <li>• Students will learn Pendulum animation and understand the principles of arcs and overlap.</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• Students will be learning lamp jumps along with the basics of walk cycles.</li> </ul>

**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:

## 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

**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

## Semester 2

<b>Graphic Design</b>		
Sub Code: xxxxxx	Credits:	Duration:

### 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

<b>3D Digital Modelling</b>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Introduction to tools and interface</li> <li>• Create complex assets using multiple primitive tools like Spline, loft, lathe, etc.</li> <li>• Understanding and creating Objects using primitive tools and polygon modelling</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Creating a 3D Prop which is a little complex</li> <li>• Unwrapping a high poly prop using major modelling tools</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• Understanding UV layout, unwrap and, UV spreadsheet</li> <li>• Modelling and unwrapping an interior filled with props using Polygons</li> </ul>

**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

<b>Animation I</b>		
Sub Code:	Credits:	Duration:

**Indicative Content:**

<p>UNIT-1</p> <ul style="list-style-type: none"> <li>• Students will learn bouncing ball and understand the principles of stretch and squash.</li> <li>• Students will learn a ball bounce with a different weight.</li> </ul>
<p>UNIT-2</p> <ul style="list-style-type: none"> <li>• Students will learn ball bounce with a tail attached to it.</li> <li>• Students will learn Pendulum animation and understand the principles of arcs and overlap.</li> </ul>
<p>UNIT-3</p> <ul style="list-style-type: none"> <li>• Students will be learning lamp jump along with basics of walk cycles.</li> </ul>

**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:

### 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

<b>Drawing Fundamentals II</b>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p>UNIT-1 Advanced Perspective</p> <ul style="list-style-type: none"> <li>• Further exploration of perspective techniques</li> <li>• Exercises in creating complex scenes and environments</li> </ul>
<p>UNIT-2 Figure Drawing</p> <ul style="list-style-type: none"> <li>• Introduction to the principles of figure drawing</li> <li>• Basic exercises in capturing the human form and gesture</li> <li>• Exploration of different approaches to figure drawing</li> </ul>
<p>UNIT-3 Colour Theory</p> <ul style="list-style-type: none"> <li>• Introduction to the principles of colour theory</li> <li>• Basic exercises in creating colour palettes and using colour to convey mood and emotion.</li> </ul>
<p>UNIT-4 Lighting and Shadow</p> <ul style="list-style-type: none"> <li>• Introduction to the principles of lighting and shadow in drawing</li> <li>• Exercises in creating dramatic lighting and shadows</li> <li>• Discussion of the role of lighting and shadow in creating atmosphere</li> </ul>
<p>UNIT-5 Final Project and Portfolio Review</p> <ul style="list-style-type: none"> <li>• Students will complete a final project that demonstrates their understanding of the principles covered in the course</li> <li>• Portfolio review and discussion of potential career paths in gaming and animation</li> </ul>

**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

<b>Digital Sculpting</b>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p>UNIT-1</p> <ul style="list-style-type: none"> <li>• Understanding of the concept of high detailed modelling</li> <li>• Understanding &amp; sculpting hard surface models with its macro level detailing</li> <li>• Understanding sculpting of an organic creature with its prominent details.</li> </ul>
<p>UNIT-2</p> <ul style="list-style-type: none"> <li>• Understanding usage of Zbrush and basics of sculpting</li> <li>• Anatomical Study for Character Modelling and Planning Mesh Flows / Face Loops</li> </ul>
<p>UNIT-3</p> <ul style="list-style-type: none"> <li>• Blocking the Organic Form by Sculpting</li> <li>• Sculpting medium details and fine details and Retopology</li> <li>• Unwrapping, Polypainting and Texture Map Extractions</li> </ul>
<p>UNIT-4</p> <ul style="list-style-type: none"> <li>• Introduction of Digital sculpting software tools like Pixologic Zbrush, Autodesk Mudbox.</li> <li>• Understand high detail sculpting and techniques relevant to cg art creation.</li> </ul>

**OUTCOMES:**

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

- Be able to learn how to model low rez mesh in Zbrush
- Understanding of the concept of high detailed modelling.
- The generation of texture maps from high-detail models and understanding of their relevance to games.

**Suggested Reading/ References:**

1. Zbrush Character creation: Advanced Digital Sculpting
2. Digital Sculpting with Mudbox: Essential tools and techniques for artists

**Assessment Mapping:**

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

<b>Hard Surface Modeling</b>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p>UNIT-1</p> <ul style="list-style-type: none"> <li>• Create both high-poly and low-poly versions of a vehicle, with the goal of creating normal, AO and specular maps.</li> <li>• Learn how to create error-free normal maps and use them on low-poly models.</li> <li>• Creating textures with object history.</li> </ul>
<p>UNIT-2</p> <ul style="list-style-type: none"> <li>• Creation of a Combat vehicle. Research needs. Macro workflow and schedule.</li> <li>• Creating the color, Specular and Gloss texture.</li> <li>• Creating the high-resolution model and normal map.</li> </ul>
<p>UNIT-3</p> <ul style="list-style-type: none"> <li>• Understanding of Normal and AOMaps</li> <li>• Using normal, AO and specular maps on a low-polymodel.</li> </ul>
<p>UNIT-4</p> <ul style="list-style-type: none"> <li>• Understanding the fundamentals of 3DSMax \ Maya</li> <li>• Applying the concepts learnt in creation of a hard surface prop and in game model</li> </ul>

**OUTCOMES:**

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

- Understanding the approach of low poly and high poly modeling with details.
- Knowledge of texture baking using a cage.
- Understanding how to clean up and retouching the textures for final output, and common error’s pertaining to textures baking.
- Understanding how to clean up and retouching the textures for final output.

**Suggested Reading/ References:**

1. Blender 3D 2.49 Architecture, Buildings, and Scenery – Allan Brito
2. Blender 3D Incredible Machines – Christopher Kuhn

**Assessment Mapping:**

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x

<h1>Animation II</h1>		
Sub Code:	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Helps students to understand the body dynamics at play while doing specific actions, such as Full Body Walk, Push and Pull.</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• Students will understand how to create strong poses with personality.</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• Students will be able to demonstrate technical understanding of constraints which will build a good foundation for upcoming modules.</li> </ul>

**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

<h1>Rigging &amp; Skinning I</h1>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Understanding of a character Rig setup, Skinning and painting weights along with creating a Global control. Also use and understand deformers and rigid binding.</li> <li>• Understanding Create Joint Setup &amp; Controls for Cartoon Character</li> <li>• Understanding to Create an FK/IK Hand setup, Finger Control and have to create an IK Leg setup</li> <li>• Understanding Jaw and Eye Controls, Aim Constraints for eyes and a global control for the character.</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• Understanding Smooth Bind &amp; Paint Weight the mesh to the Joints. This will attach the rig to the character mesh.</li> <li>• Understanding of component editor for skinning.</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• To understand Human IK.</li> <li>• Facial Rig setup and Facial Controllers</li> </ul>

**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) – Kieran Ritchie

**Assessment Mapping:**

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

# Concept Art

Sub Code: xxxxxx

Credits:

Duration:

**Indicative Content:**

**UNIT-1 Introduction to Concept art**

- Understanding purpose and importance of Concept art
- Philosophy of art & Storytelling
- Revisiting fundamentals of art
- Shapes and silhouettes
- Art-styles and Artists

**UNIT-2 Tools & Techniques**

- Familiarising painting tools in Photoshop
- Effects, Levels & Curves
- Strokes, Shading & Hatching
- File organisation

**UNIT- 3 Conceptualization and Iteration**

- References to increase our visual library
- Understanding Fantasy vs. Functionality
- Thumbnails

**UNIT- 4 Concept Art**

- Value studies
- Photobashing
- Materials, Lights and Shadows
- Rendering

**OUTCOMES:**

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

- Accelerate creative thinking for concepts
- Understand visual elements and how they help in selling your ideas.
- Interpret design briefs effectively
- Understand pipelines and quick techniques to make art.
- Successfully translating ideas into polished industry standard concept art.

**Reading and Reference Materials:**

- Darek Zabrocki – First Sun (Gumroad)
- Adobe Live – Drawing characters and environments with Jonah Lobe (Youtube)

**Assessment Mapping:**

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

## Semester 4

<b>Organic Modelling, I</b>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Understand Complete gaming pipeline.</li> <li>• Planning (how to start and understand reference).</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• Blocking the base mesh.</li> <li>• Sculpting highpoly Model with all details.</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• Retopo the highpoly model and Unwrap the mesh</li> <li>• Bake all the necessary maps.</li> </ul>
<p><b>UNIT-4</b></p> <ul style="list-style-type: none"> <li>• Texturing and rendering</li> </ul>

**OUTCOMES:**

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

- Understanding the study and importance of basic human anatomy.
- Understanding the concept and implications of line for a character model.
- Understanding of the animal anatomy and sculpting all details.
- Able to pose in zbrush and render for a good presentation.

**Suggested Reading/ References:**

- Anatomy for 3D sculptors
- Essential skills in organic modelling by Nicholas B Zeman
- ZBrush character sculpting

**Assessment Mapping:**

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x

<b>3D Environments I</b>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Collect Reference And creating a mood board to have a broader aspect of what to create.</li> <li>• Block out the base model and check scale.</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• Add details to the basic block of the environment which was created with the use of reference and unwrap the same.</li> <li>• Export the unwrapped file to either Substance or Photoshop for texturing.</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• Introduction to Unreal engine</li> <li>• Setup project and import all assets.</li> <li>• Create and apply materials.</li> </ul>
<p><b>UNIT-4</b></p> <ul style="list-style-type: none"> <li>• Applying Lighting and rendering</li> </ul>

**OUTCOMES:**

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

- Learn to create a simple Game environment, and render it in unreal engine
- Learn about lighting and rendering in Unreal engine
- Different types of materials

**Assessment Mapping:**

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x



<b>Body Mechanics I</b>		
Sub Code:	Credits:	Duration: 6 weeks

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Learning how to break-down an animation into golden and key-poses. Creating in-between frames from the key poses and complete the animation.</li> <li>• Understand how to balance weight, the body dynamics behind lifting a heavy object, and throwing the object.</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Strengthen knowledge on posing and breaking down animation.</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• To reinforce the fundamentals of Body dynamics the concept of weight but with the help of their live video reference.</li> <li>• 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)</li> </ul>

**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:**

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 - 4	Overall
Assignment	x	
Portfolio		x

<b>Rigging &amp; Skinning II</b>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Understanding of a character Rig setup, Skinning and painting weights along with creating a Global control. Also use and understand deformers and rigid binding.</li> <li>• Understanding Create Joint Setup &amp; Controls for Quadruped and creatures</li> <li>• Understanding to Create an FK/IK Hand setup,</li> <li>• Understanding tail Controls (Dynamic), Aim Constraints for eyes and a global control for the character.</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• Understanding Smooth Bind &amp; Paint Weight the mesh to the Joints. This will attach the rig to the character mesh.</li> <li>• Understanding of component editor for skinning.</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• To understand Human IK.</li> <li>• Facial Rig setup and Facial Controllers</li> </ul>

**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

<h1>Preproduction</h1>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1 Screen Writing</b></p> <ul style="list-style-type: none"> <li>• Anatomy of a Script, Script Elements and Scene Heading, Action, Characters. Dialogue - Parenthetical - Extension - Transition - Shots - Page Breaking, Finer Points, Dual Dialogue Reading Scripts from Popular Television Shows and Animation Films.</li> </ul>
<p><b>UNIT-2 Concept Art and Story Sketches</b></p> <ul style="list-style-type: none"> <li>• Research - Period - Historic / Scientific facts, Society Costumes Props, Food etc. Illustration, Anatomy, rendering your drawings, Techniques and styles, Inking – Graphic styles, Text – as image, Page Elements and Composition, Projecting figures in Deep space, Framing and Composition, Perspective and Camera.</li> </ul>
<p><b>UNIT-3 Story Board</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>
<p><b>UNIT-4 Character Design, Layout Design.</b></p> <p>Character Visualization, Character Bible, Stereotypes, Developing Character for Comics, Films and TV Episode. Elements of Character Design Creating Characters from Life Anthropomorphism, Definition and meaning, Use of Anthropomorphic Characters in Modern Literature, Films and Television, Theo Morphs and Pathetic Fallacy Introduction to Layout, importance of layout in Animation, Perspective- one point, two-point, three point, Warped, Schematics Projection, Cinematic Camera Angles. Preparing/Posing Layouts, Aspect Ratio, field guides, Schematic mapping, Camera Movements</p>

**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

<b>Hard Surface Modelling II</b>		
Sub Code: xxxxxx	Credits:	Duration:

### Indicative Content:

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Collect Reference And creating a mood board to have a broader aspect of what to create.</li> <li>• Block out the base model and check scale.</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• Add details to the basic block of the model which was created with the use of reference.</li> <li>• Create a highpoly version based of the low poly</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• Export the unwrapped file to either Substance or Photoshop for texturing.</li> <li>• Baking and Texturing Using normal, AO and specular maps on a low-poly model.</li> </ul>
<p><b>UNIT-4</b></p> <ul style="list-style-type: none"> <li>• Setup project and import all assets.</li> <li>• Create and apply materials.</li> <li>• Applying Lighting and rendering</li> </ul>

### OUTCOMES:

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

- Understanding how to create a complex mech or war machine
- Understanding how create highpoly
- Understanding the Baking and Texturing procedure

### Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

# Pantomime

Sub Code:	Credits:	Duration:
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**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>•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.</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>

**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

<b>3D Environments II</b>		
Sub Code:	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Collect Reference And create a mood board to have a broader aspect of what to create.</li> <li>• Block out the base model and check the scale.</li> <li>• Identify the modular parts</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• Create modular and non-modular parts.</li> <li>• Planning for trim sheets and unique textures</li> <li>• Export the unwrapped file to either Substance or Photoshop for texturing.</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• Setup project and import all assets to the Unreal engine</li> <li>• Create and apply materials.</li> <li>• Set up the environment.</li> </ul>
<p><b>UNIT-4</b></p> <ul style="list-style-type: none"> <li>• Applying Lighting and rendering of the modular and non-modular parts</li> </ul>

**OUTCOMES:**

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

- Learn to create a complex Game level, and render it in an unreal engine
- Use of trim sheets
- Use of modular asset
- complex materials

**Assessment Mapping:**

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x

<h1>Body mechanics II</h1>		
Sub Code:	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• To understand how to balance weight, and to understand the body dynamics behind a combat and idle animation, with the help of a reference</li> <li>• To help reinforce the fundamentals of Body dynamics and the concept of weight with the help of live video references and books.</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• Before animating a character, one should know about the character’s behaviour which generally comprises of.</li> <li>• Knowing every detail of your character will help you spot small nuances while animating the character.</li> <li>• A small change in gesture will speak a lot about the character’s actions.</li> <li>• Keeping an action pose in mind while drawing will help in knowing the body dynamics and then it becomes easier for the animator to know how the body of the characters behaves.</li> </ul>
<p><b>UNIT-3</b></p> <ul style="list-style-type: none"> <li>• Understanding facial expression change for a dialogue animation.</li> <li>• <b>OLLIE JOHNSTON NOTES – “Twelve Rules for Facial Expression”</b></li> </ul>

**OUTCOMES:**

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

- Understand the purpose of weight in athletic, and fast body motion.
- Understand the purpose of expressing emotion through the body.
- Understand the purpose of facial muscles and the tips and tricks to use them.
- Performance Acting as a live reference for the animation assignment.

**Suggested Reading/ References:**

1. Simplified Drawing for Planning Animation – Wayne Gilbert
2. Complete Animation Course, Chris Patmore, Barrons Educational Series Inc, 2015
3. Blender 2.5 Character Animation Cookbook – Virgilio Vasconcelos
4. <https://thinkinganimation.com/twelve-rules-facial-expression/>

**Assessment Mapping:**

Assessment	Outcome-1 - 4	Overall
Assignment	x	
Portfolio		x



<h1>Lighting and Rendering</h1>		
Sub Code:	Credits:	Duration: 4 weeks

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Basics of Lighting</li> <li>• Set up a direct light source</li> <li>• Create, group, and modify lights in your scene with the Light Editor</li> <li>• Adjust lighting</li> <li>• Shadow in Maya</li> <li>• Lighting Reference</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• Setup and real-world lighting</li> <li>• Creature portrait lighting, part 1</li> <li>• Beauty lighting for cg product shots, part 1</li> <li>• Environmental lighting for action shots, part 1</li> </ul>

**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, 2<sup>nd</sup> edition*
3. *Light science and magic 5<sup>th</sup> edition.*

**Assessment Mapping:**

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

## Semester 6

<b>Organic Modelling II</b>		
Sub Code: xxxxxx	Credits:	Duration:

### Indicative Content:

<b>UNIT-1</b> <ul style="list-style-type: none"> <li>• Understand the Complete gaming pipeline for the realistic character.</li> <li>• Planning (how to start and understand the reference).</li> </ul>
<b>UNIT-2</b> <ul style="list-style-type: none"> <li>• Blocking the base mesh.</li> <li>• Sculpting high poly Model with all details.</li> </ul>
<b>UNIT-3</b> <ul style="list-style-type: none"> <li>• Retopo the high poly model and Unwrap the mesh</li> <li>• Bake all the necessary maps.</li> </ul>
<b>UNIT-4</b> <ul style="list-style-type: none"> <li>• Projection textures</li> <li>• Texturing and rendering</li> </ul>

### OUTCOMES:

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

- Create a complex realistic game ready character
- Learn the posing technique
- Rendering using Arnold and displacement map

### Assessment Mapping:

Assessment	Outcome-1 - 3	Overall
Assignment	x	
Portfolio		x

<b>Facial Acting</b>		
Sub Code:	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b></p> <ul style="list-style-type: none"> <li>• Learn different parts of the face.</li> <li>• Identifying different muscles associated with making an expression.</li> <li>• Learn how to perform lip-syncing</li> </ul>
<p><b>UNIT-2</b></p> <ul style="list-style-type: none"> <li>• How to set up a face library for expression change, and mouth shapes.</li> <li>• Refining Blocking for expression change, and mouth shapes.</li> <li>• Polish, correct the animation.</li> <li>• One planned single-character shot with audio.</li> </ul>
<ul style="list-style-type: none"> <li>• This will also be a key exercise on how to introduce your shot to a Supervisor/Director before playing a shot to them.</li> </ul>

**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

# Acting for Animation

Sub Code:

Credits:

Duration:

## 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

<b>Post-production</b>		
Sub Code: xxxxxx	Credits:	Duration:

**Indicative Content:**

<p><b>UNIT-1</b> Introduction to Compositing</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>
<p><b>UNIT-2</b> Compositing in 2D and 3D, Chroma, Paint and Rotoscope,</p> <ul style="list-style-type: none"> <li>• 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</li> </ul>
<p><b>UNIT-3</b> Colour, Camera and Tracking, Expressions and Rendering</p> <ul style="list-style-type: none"> <li>• 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,</li> </ul>

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:**

- Familiarize 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

## Intro To AR/VR

Sub Code: xxxxxx

Credits:

Duration:

### Indicative Content:

#### UNIT-1

- Game Engine
- Camera
- Overview of the editor
- Unity UI
- Move, Rotate, and Scale
- Visual scripting.

#### UNIT-2

- Virtual reality App development using unity IF we have hardware (Google Cardboard, Oculus, HTC Vive, PS\_VR)

#### UNIT-3

- AR App development using unity for handheld devices (marker less, marker-based)

### OUTCOMES:

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

- Familiarize with Unity Editor and Visual scripting.
- Move, Rotate and Scale Objects.
- Build a Menu system using Unity UI.
- Develop an AR application.
- Develop a VR application.

### Suggested Reading/ References:

Unity Cookbook.

### Assessment Mapping:

Assessment	Outcome-1 - 3	Outcome-4 - 5	Overall
Assignment	x	x	
Case study		x	
Portfolio			x

