

**SHRI GOVIND GURU UNIVERSITY,
GODHRA**



Faculty of Design
Syllabus for
**(B.Des. ANIMATION FILM
DESIGN)**

Choice Based Credit System

With Effect From: 2021-22

SEMESTER – I

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF101	Computer Fundamentals & Concepts of Graphics and Illustrations	3	1	1	5

PURPOSE:

- Familiarising students about the various factors that affect the aesthetic and functional aspects of design through training in two-dimensional and three-dimensional design compositions.

OBJECTIVES:

- To understand various design principles such as emphasis, balance, contrast, harmony, unity etc., and applying them in two-dimensional and three-dimensional compositions.
- To understand and apply design elements such as point, line, shape, colour, texture, area, mass, volume etc.
- To be able to critically analyse the design of existing manmade objects, aiding self-criticism of design.
- To draw inspiration from nature as a source for design.
- To develop an understanding of various degrees of enclosure and various types of relationships between spaces. To be able to understand the various effects that can be created by manipulating the enclosing elements of walls, roofs etc.

ASSIGNMENTS:

- Logo Designing and Branding,
- Re-Creation,
- Creating Advertising Materials,
- Poster Designing,
- Talking Typography,
- Creating Brochure and Catalogue,
- Designing for Social Media,
- Designing for Print – Stationery Designing.

REFERENCE BOOKS:

- The Fundamentals of Graphic Design by Gavin Ambrose (Author), Paul Harris (Author), Nigel Ball (Author) - Bloomsbury Visual Arts.
- Typography Handbook (Design) – TASCHEN (Editor)
- Adobe Illustrator CC Classroom in a Book by Brian wood (Author).
 - Adobe Photoshop CC Classroom in a Book | First Edition | By Pearson
 - by Andrew Faulkner.
 - Corel Draw X8: The Official Guide by Garry David Bouton (Author)
 - Adobe InDesign CC Classroom Book 2018 | First Edition | By Pearson
 - by Kelly Kordes Anton

THE AIMS AND OBJECTIVES OF THIS INCLUDE THE FOLLOWING:

- To understand fundamentally the general scope of the computer system.
- To interact effectively with the computer.
- To know the uses of the basic components of the computer.
- To manage the system to some extent before involving an expert.
- To know some basic things about the computer and the world.

COMPUTER FUNDAMENTALS

UNIT I: USES OF COMPUTERS

UNIT II: HISTORY OF COMPUTING

UNIT III: SOFTWARE AND HARDWARE

UNIT IV: DIFFERENT PARTS OF A COMPUTER AND THEIR USES

UNIT V: THE MONITOR

UNIT VI: THE SYSTEM BOX OR COMPUTER CONSOLE

UNIT VII: THE KEYBOARD (PRESSING)

UNIT VIII: THE MOUSE (CLICKING AND DRAGGING)

UNIT IX: THE PERIPHERALS

UNIT X: DISK SIZE CONVERSION CHART (BITS, BYTES, KILOBYTES, MEGABYTES AND GIGABYTES).

UNIT XI: HARDWARE CONNECTIONS

UNIT XII: COMPUTER SOFTWARE

UNIT XIII: BASIC COMPUTER MAINTENANCE

UNIT XIV: INTRODUCTION TO THE INTERNET

UNIT XV: FILE MANAGEMENT

CONCEPTS OF GRAPHICS & ILLUSTRATIONS

UNIT I: The concept of drawing

UNIT II: The basic elements of drawing

UNIT III: The various perspectives that come into play when creating drawings

UNIT IV: The different types of drawings

UNIT V: How artistic compositions are created

UNIT VI: Perspective and multi-view drawing

UNIT VII: The color theory

UNIT VIII: the color wheel

UNIT IX: the basic color concepts

UNIT X: Hue, saturation, and value

UNIT XI: Transparent and opaque colors

UNIT XII: The various color models

UNIT XIII: Indexed color

UNIT XIV: True color

UNIT XV: The various Laws of Design

UNIT XVI: The image resolution

UNIT XVII: The various graphic file formats

UNIT XVIII: The different graphic programs

UNIT XIX: The different file formats for web-based graphics

UNIT XX: The web-safe color palette

UNIT XXI: The various types of illustrations

UNIT XXII: The different tools used when creating illustrations

UNIT XXIII: The different techniques used when creating illustrations

SESSION COVERAGE:

UNIT I: Drawing

- Introduction
- Elements of Drawing
- Creating Drawings
- Types of Drawing
- Drawing Composition
- Perspective Drawing and Multiview Drawing

UNIT II: Color Theory

- Introduction
- Introduction to Color Wheel
- Color Concepts
- Hue, Saturation, Value
- Transparent and Opaque Colors
- Color Models
- Indexed Color
- True Color

UNIT III: Laws of Design

- Introduction
- The Law of Balance
- The Law of Rhythm
- The Law of Emphasis
- The Law of Unity
- The Law of Proportion
- The Law of Simplicity

UNIT IV: Resolution and File Formats

- Understanding Resolution
- Image Resolution
- Device Resolution
- Printer Resolution
- Interpolated Resolution
- Digital Image
- File Size and Bit Depth
- Scanning Images
- Graphic File Format

UNIT V: Understanding and Working with

- Graphics and Web Images
- Session Contents:
- Understanding Graphic Images
- Types of Graphic Program
- Features of Graphics Programs
- File Formats for the Web
- Colors and Text for the Web

UNIT VI: Illustration and Software

- Introduction
- History
- Illustration Today
- Function
- Illustrator
- Types of Illustration
- Illustration Programs

UNIT VII: Illustration Tools and Techniques

- Tools
- Techniques

SEMESTER – I

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF102	Technical Representation of Drawing	2	0	1	3

PURPOSE:

- Workshop activity enhances skill development. Handling different materials provides better understanding of the use of that material.

OBJECTIVES:

- To enable students to explore the use different materials in their design.
- To have a proper understanding of the joinery used in various types of materials.
- To be able to select the appropriate material and detailing.

TECHNICAL REPRESENTATION OF DRAWING

- Technical Representation of Drawing-I
- Communication & Presentation Skills-I

SEMESTER – I

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF103	Fundamentals of Drawing, Light & Shading, Perspective - Drawing	2	2	0	4

PURPOSE:

- Understanding of basic building elements of drawing and its Applications.
- Developing skills to communicate construction techniques through the introduction of drawing terminologies and through drawings and model making.

OBJECTIVES:

- To understand the basic components for Creating Designs and drawings with application of proper Principles and to gain knowledge of the Basic elements like Shape, color and texture.

SESSION COVERAGE:

UNIT I: Introduction to Drawing

- How to be comfortable Pencil
- Different lines & Different shapes
- Horizontal, Vertical, Diagonal, wavy, zigzag line
- Design Patterns
- Color Theory

UNIT II: Application of Drawing with Shading

- Gesture drawings
- Live sketching (objects, natural)

UNIT III: Perspective Drawing

- Perspective
- Drawing
- 1 Point,
- 2 Point,
- 3 Point

SEMESTER – I

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF104	Digital Illustration & Digital Painting	5	0	4	9

PURPOSE:

- Improving students' drawing abilities and technical Abilities to work with designing Software and to Create Applications Accordingly.

OBJECTIVES:

- To help students understand and explore the techniques of various methods of Graphic Designing and Illustrations.

DIGITAL ILLUSTRATIONS - ADOBE ILLUSTRATOR / INKSCAPE

- Describe the Organizational Structure in an Ad Agency
- Differentiate between Vector and Raster images
- Utilize Illustrator workspace
- Navigate around an Illustrator file and save it
- Create a logo for a company
- Identify the Key Points of a Visiting Card
- Identify Different Types of Visiting Cards
- Create a Visiting Card with a Gradient Background
- Create a Letterhead with a Watermark
- Create an Envelope with Decorative Corners
- Differentiate between the types of labels in the packaging industry
- Create a bottle outline using the Pen tool
- Create a packaging label
- Create a 3D bottle using 3D revolve
- Apply a label to a bottle using Map Art
- Differentiate between different types of dimensions
- Differentiate between different types of folds
- Create a brochure using the Type tool
- Create a print hoarding
- Utilize Illustrator effects on text and images

SESSION COVERAGE:

UNIT I: Becoming a Graphic Artist

- Organizational Structure in an Ad Agency
- Use of Vectors in Creative Services
- Illustrator Window
- Working with Documents
- Creating New Documents
- Using Artwork Space
- Creating a Logo
- Swatches Panel
- Correcting Mistakes
- Saving Documents

UNIT II: Creating Stationary

- Key Points of a Visiting Card
- Different Types of Visiting Cards
- Creating a Visiting Card
- Creating a Letterhead
- Creating an Envelope

UNIT III: Creating a Bottle in 3D and Applying Labels

- Determining the Right Type of Labels
- Creating a Bottle Outline
- Creating a Label
- Creating a 3D Bottle

UNIT IV: Creating a Brochure

- Determining Dimensions and Folds
- Creating a Brochure

UNIT V: Creating a Hoarding

- What Mix Sells a Hoarding?
- Clipping Mask
- Creating the Hoarding

DIGITAL PAINTING – ADOBE PHOTOSHOP / KRITA

- Describe Adobe Photoshop CC and its components
- List and explain the features of Adobe Photoshop CC
- List and explain the tools used in Adobe Photoshop CC
- Discuss the relevance of Adobe Photoshop CC in advertising - Print and Digital Media
- Demonstrate how to work with the tools in Adobe Photoshop CC
- Define Typography and its relevance in advertising
- Explain how to create typographies in Adobe Photoshop CC using type tools
- Recognize the relevance of choosing the right font and color in Adobe Photoshop CC
- Explain the cropping features in Adobe Photoshop CC
- Discuss the importance of straightening an image and the perspective crop option in Adobe Photoshop CC
- Explain how to resize an image for print and digital media in Adobe Photoshop CC
- Discuss the resampling options in Adobe Photoshop CC
- Discuss the importance of Photoshop filters in print and digital media
- Explain how to use Smart filters to apply filter effects in Adobe Photoshop CC
- Explain how to adjust the filter effect and sharpen the images in Adobe Photoshop CC
- List the different types of brushes used for digital painting
- Explain the steps to create and save custom brushes for digital painting
- Recognize the relevance of choosing and mixing the right color for print and digital media
- Describe the importance of vector and layer masks in Adobe Photoshop CC
- Explain the steps to create a vector and layer masks for print and digital media designs

SESSION COVERAGE:

UNIT I: Getting Started with Adobe Photoshop CC

- Overview of Adobe Photoshop CC
- Features of Adobe Photoshop CC

UNIT II: Importance of Adobe Photoshop CC

- Overview of Tools Used in Adobe Photoshop CC
- Importance of Adobe Photoshop CC

UNIT III: Working with Typography

- Typography
- Creating Typographies
- Choosing the Right Font and Color

UNIT IV: Working with Layers and Images

- Cropping a Photo
- Resizing Images
- Basics of Layers
- Creating Layers for Print and Digital Media
- Aligning Images within Multiple Layers
- Merging Layer Techniques

UNIT V: Working with Filters

- Photoshop Filters
- Smart Filters
- Common Features of Photoshop Filter

UNIT IV: Digital Painting in Adobe Photoshop CC

- Working with Brush Tool
- Importance of Using Colors

UNIT VII: Masking and File Formats in Adobe Photoshop CC

- Introduction to Mask
- Creating Vector and Layer Masks
- Essential File Formats
- Choosing the Right Format for Print and Digital Media

SEMESTER – I

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF105	Creating Artworks & Page Design	3	0	2	5

PURPOSE:

- Providing adequate knowledge of communicative design and Creating Artworks that present Clear Ideas regarding the same.

OBJECTIVES:

- To introduce to the student, designing vocabulary, communication and Visual presentation skills.

CREATING ARTWORKS - CORELDRAW

- Describe the basic features of CorelDraw and the common features between CorelDraw and Illustrator
- Perform actions such as drawing, selecting, changing order, transforming, duplicating, and organizing objects in CorelDraw
- Navigate around CorelDraw document and save it
- Work with lines, calligraphy, and reshaping tools in CorelDraw
- Apply fills and outlines to illustrations in CorelDraw
- Use pages, layout tools, and different viewing modes
- Work with layers and symbols in CorelDraw
- Use, edit, and create artistic and paragraph text in CorelDraw
- Perform actions such as, text wraps and linking of text
- Find and replace text and special characters, insert formatting codes, and identify fonts in CorelDraw
- Create text in columns
- Create and apply style capabilities
- Create, modify, and format a table
- Insert formatting codes, for example, em dashes and nonbreaking spaces
- Apply envelopes, distortion effects, blends, and contours in CorelDraw
- Apply transparency, drop shadow effect, extrude, and lens effect in CorelDraw
- Apply perspective, bevel, and Power Clip effects in CorelDraw
- Create boundaries to objects and copy and clone the effect of one object to another in CorelDraw
- Copy and clone effects to the objects
- Insert barcodes and QR codes
- Import and export projects
- Work with bitmap images
- Work with Internet toolbar
- Publish the CorelDraw files for Web

- Create the rollover effect
- Save documents created on CorelDraw as PDF files
- Print objects/documents created on CorelDraw

SESSION COVERAGE:

UNIT I: Getting Started with CorelDraw

- CorelDraw Interface
- Introduction to Corel Connect
- Moving from Adobe Illustrator to CorelDraw
- Drawing Basic Shapes
- Selecting Objects
- Changing Order of Objects
- Transforming Objects, Duplicating Objects
- Organizing Objects
- Zooming, Panning, and Scrolling
- Hiding and Displaying Objects
- Using Guides and Grids
- Saving the Document

UNIT II: Drawing and Coloring

- Drawing Lines in CorelDraw
- Calligraphy
- Shape Edit Tool
- Applying Fills and Outlines
- Pages and Layout Tools
- Viewing Modes
- Working with Layers
- Working with Symbols
- Creating Styles

UNIT III: Working with Text

- Artistic Text
- Fitting Text to Curve
- Reshaping Tools
- Paragraph Text
- Entering and Editing Paragraph Text
- Wrapping Text around Other Shapes
- Linking Text to Objects
- Finding and Replacing
- Working with Text Styles
- Working with Tables
- Inserting Formatting Codes

UNIT IV: Applying Effects

- Envelopes and Distortion Effects
- Blends and Contours
- Transparency and Drop Shadow
- Extrude
- Lens
- Perspective
- Bevel
- Power Clip
- Create Boundary
- Copying and Cloning Effects
- Inserting Bar Codes
- Inserting and Editing QR Codes

UNIT V: Working with Bitmaps and Web Resources

- Importing and Exporting Bitmaps
- Working with Bitmaps
- Internet Toolbar
- Setting Web Pages
- Creating Buttons with Rollover Effects
- Publishing to PDF
- Printing

PAGE DESIGN – INDESIGN / CANVA

- Perform actions such as drawing, selecting, changing order, transforming, duplicating, and Describe Workspace
- Describe Liquid layouts
- Explain Grids and Smart Guides
- Modify the different Layout options
- Work with Pints and Paths
- Describe how to work with text frames
- Describe the different loading and importing styles
- Describe how to work with Special Text Characters
- Explain how to work with basic shapes
- Explain Transform tool
- Describe different uses of Gap tool
- Explain how to work with Layers
- Describe how to apply colors to frames and text
- Describe the uses of tables
- Explain how to work with headers and footers
- Describe Drop Shadow, Bevel, and Emboss
- Explain how to add arrows
- Explain Opacity and Blend Modes
- Explain how to add text variables
- Describe how to create captions
- Explain how to add blank page
- Describe how to make books
- Explain how to create table of contents
- Explain Workspace basics
- Describe how to manage windows and panels
- Explain the different Toolbar in detail
- Describe how to view stories

SESSION COVERAGE:

UNIT I: Introduction to InDesign CC

- Workspace - Working with Panels
- Customizing Workspace
- Understanding Project Requirements

UNIT II: Working with Documents & Design Elements of Page Layouts

- Working with Documents
- Liquid layouts
- Alternate Layouts
- Using Document Rules
- Working with Guides
- Using Smart Guides
- Using Grids

UNIT III: Understanding Layout Fundamentals

- Setting the Layout options
- Changing the layout options
- Using Presets
- Working with pints and paths

UNIT IV: Working with Text & Typography

- Working with Text Frames
- Formatting Text
- Character and Paragraph Styles
- Loading and importing styles
- Text Editing
- Using Story Editor
- Inserting Glyphs and Special Characters
- Working with Character Panel
- Alignments and Indent
- Bullet and numbering
- Using Glyphs points
- Text Flow
- Control panel for text
- Using Special Text Characters

UNIT V: Working with Graphics and Objects

- Creating Basic Shapes
- Selecting, moving, and replacing objects
- Transform Tool
- Using Gap Tool
- Placing Artwork
- Image importing options
- Linking Graphics
- Viewing images
- Working with Layers

UNIT VI: Working with Colors & Tables

- Applying colors to frames & Text
- Creating a Tint Reduction
- Gradients
- Using color panels
- Using swatch libraries
- Overprinting colors
- Inserting Tab characters
- Using Tables
- Working with Headers and Footers

UNIT VII: Creative Effects

- Applying Opacity to Objects
- Drop Shadow
- Bevel & Emboss
- Basic Feather
- Adding Arrows
- Applying fills
- Opacity and blend mode effects

UNIT VIII: Working with Advanced Document Features

- Adding Text Variables
- Creating Captions
- Changing the page panel
- Adding blank page
- Navigating and Moving pages
- Master page
- Making Books
- Creating Table of Contents

UNIT IX: Understand InCopy

- Working with Rough Cut
- Editing Rough Cuts
- The Prelude Workspace

UNIT X: Printing & Publishing with InCopy

- Printing Stories
- Setting up a Printer
- Exporting to PDF
- Exporting to XML

SEMESTER – I

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF106	Project: Creating a Branding Campaign / Company Stationery & Social Media Design / Publishing Project	1	0	6	7

PURPOSE:

- Developing an understanding of a logo creation and Associated Branding and Designing.

OBJECTIVES:

- To develop an understanding of various degrees of enclosure, various types of relationships between spaces. Understanding of the various effects that could be created by manipulating the enclosing elements such as Shape, Form and Color etc.
- To understand the use of colours and their effects in drawing.

PROJECT: CREATING A BRANDING CAMPAIGN/COMPANY STATIONERY & SOCIAL MEDIA DESIGN / PUBLISHING PROJECT

- Create a simulated project in print and publishing and Social Media Based Branding Campaign

UNIT I: Planning and Designing

- Planning
- Planning a Project
- Steps Towards Perfect Assignment
- The Design
- Line and Halftone Artwork
- Project: Stationary Designing

UNIT II: Planning Layouts

- Production Process Flow
- Planning the Layout
- Tips for Designing and Page Layout
- Typography and Typefaces
- Typesetting
- Project: Press Advertisement or Magazine Advertisement Layout

UNIT III: Making Artworks

- Execution of an Assignment
- Preparing an Artwork
- Sending Files to the Printer
- Tips for Publishing the Project
- Commonly Used File Formats
- Checklist
- Project: Brochure Design

UNIT IV: Processing, Printing and Paper and Social Media

- Scanning and Printing
- Processing
- Types of Printing Processes
- Paper
- International Standard Paper Sizes
- Project: Poster/Hoarding or Packaging Design for the Product

SEMESTER – II

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF201	Concepts of Cinematography & Photography	4	2	1	7

PURPOSE:

- Introduction to Visual parameters, Technical know How of Photography and the use of Camera and Film Making language.

OBJECTIVES:

- To develop knowledge in Capturing and Framing a Visual Composition; analysis and manipulation of Composition, Lens and Depth.
- To develop an understanding of scale and function in the designing of small-scale spaces.

ASSIGNMENT:

- Create an Animated Game Scene
- Animated web Banner
- Character Animation
- Lip-sync Animation
- parallax Effect using Camera
- Mixing Track – Recording voice over for Video
- Photo documentary
- Creating a trailer/montage
- Shoot & Edit – TV Ad/Music Video/Short Film

JOB PROFILES APPLICABLE:

- Storyboard Artist,
- 2D Animato,
- Audio Editor,
- Video Editor
- Online Content Creator

REFERENCE BOOKS:

- Five C's of Cinematography: Motion Picture Filming Techniques
by Joseph Rogers PhD (Author)
- Screenplay: The Foundations of Screenwriting - by Syd Field (Author)
- Storyboarding Essentials: SCAD Creative Essentials (How to Translate Your Story to the Screen for Film, TV, and Other Media)
by David Harland Rousseau (Author), Benjamin Reid Phillips (Author).
- The Digital Filmmaking Handbook: The definitive guide to Digital Filmmaking
by Mark Brindle (Author), Chris Jones (Foreword).
- Adobe Animate CC Classroom Book 2018 | Animation | First Edition | By Pearson
by Russell Chun (Author)
- Adobe Premiere Pro CC Classroom Book 2018 | First Edition | By Pearson
by Maxim jago (Author).
- Adobe Audition CC Classroom in a Book by Adobe Creative Team (Author)
- The Animator's Survival Kit 5 November 2009 - by Richard E. Williams (Author).
- Cartoon Animation (Collector's Series)
by Preston Blair

CINEMATOGRAPHY & PHOTOGRAPHY CONCEPTS

- Explain Camera
- Explain types of lighting
- Explain Composition techniques for photography
- Explain cameras and sensors
- Explain lighting in film making
- Explain exposure
- Explain different types of camera movements

SESSION COVERAGE

UNIT I: Photography Concepts

- The Camera
- Lighting
- Composition Techniques

UNIT II: Cinematography Concepts

- Cameras and Sensors
- Lighting
- Exposure
- Camera Movement

SEMESTER – II

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF202	Communication & Presentation Skills	2	0	0	2

PURPOSE:

- Workshop activity enhances skill development. Handling different materials provides better understanding of the use of that material.

OBJECTIVES:

- To enable students to explore the use of different materials in their design.
- To have a proper understanding of the joinery and methods of application used in various types of materials.
- To be able to select the appropriate material and their detailing.

COMMUNICATION & PRESENTATION SKILLS

- Technical Representation of Drawing-II
- Communication & Presentation Skills-II
- Humanities

SEMESTER – II

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF203	Working with Light, Anatomy and Shading	2	1	3	6

PURPOSE:

- Introducing students to the principles and elements of interior architecture - structures and Dimensions and Creating realistic Drawings.

OBJECTIVES:

- To understand the construction of basic elements of a Drawing Layout or an Asset.

ASSIGNMENTS:

- Props / Assets Modelling
- Architecture Modelling
- Texturing an Asset
- Lighting to Scene
- Motion Graphics
- Compositing
- Motion Ads
- Product Packs hot

JOB PROFILES APPLICABLE:

- 3D Modeler
- Texturing Artist
- Lighting Artist
- Rendering Artist
- Rigging Artist
- Motion Graphics Artist
- Asset Modeler for Games

REFERENCE BOOKS:

- Art Fundamentals: Color, Light, Composition, Anatomy, Perspective, and Depth by 3dtotal Publishing.
- Anatomy & Drawing by Victor Perard (Author)
- 3ds Max Design Architectural Visualization: For Intermediate Users by Brian L. Smith (Author).
- Autodesk 3ds Max 2020: A Detailed Guide to Modeling, Texturing, Lighting, and Rendering by Pradeep Mangain (Author)

UNDERSTANDING ANATOMY DESIGN, LIGHT, COLOR AND PERSPECTIVE

At the end of this module, the student will be able to:

- Learn human body proportions
- Learn anatomy of the head
- Learn structure of the body
- Create basic pose
- Describe line of action, twisting and balance
- Observe basic forms and shapes in outdoor location
- Draw nature in simple forms
- Demonstrate the use of Cinematography in drawing outdoor location
- Appreciate the use of colors in outdoor drawing
- Apply colors to show various elements of nature
- Use Photoshop to create Layers
- Understand the use of lights and shadows in drawing
- Use shading and tones to show depth
- Understand Color theory
- Copy full figures from references
- Draw one-point, Two-point, Three-point and Four-point perspective

SESSION COVERAGE:

UNIT I: Introduction to Anatomy Design

- Anatomy Study
- Face Proportion
- Different Angle
- Drawing
- Front & Side
- Practice of
- Eyes, Nose, Lips

UNIT II: Application of Anatomy with Animation

- Animated Character proportions Structure
- Gesture drawings
- Character designing
- Diff human structure, Animal

UNIT III: Creating Assets and Model Sheet

- Drawing an Asset
- Asset Model sheet
- Character Model Sheet

UNIT IV: Outdoor Studies-Outdoor Locations

- Observing Forms and Shapes
- Adding Tones
- Shading with Texture Quality
- Contour Drawing
- Cinematography Drawing

UNIT I: Outdoor Studies-Applying Colors

- Creating Color Rough Sketches
- Shadows, Overlapping Objects, Time and Season
- Layers and Character Staging
- Creating Layers through Pharmacol

UNIT VI: Outdoor Studies-Lab Sessions

- Creating Layers through Pharmacol

UNIT VII: Outdoor Studies-Lighting Concepts

- Understanding Lights
- Understanding Proper Light Source
- Lighting and Shading
- Drawing Groups of Basic Shapes

UNIT VIII: Outdoor Studies-Color Theory

- Primary, Secondary, Tertiary and Quaternary Color
- Warm and Cool Color Applications
- Grayscale Keys in Color Applications
- Studying Expressive looks of Characters
- Copying full Figure Cartoon

UNIT IX: Outdoor Studies-Copying Techniques

- Copying full Figure Cartoons

UNIT X: Outdoor Studies-Perspective Study

- Understanding Perspective
- One Point Perspective
- Two Point Perspective

UNIT XI: Outdoor Studies-Perspective Study

- Three Point Perspective
- Four Point Perspective

SEMESTER – II

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF204	Creating 2D Animation	4	0	3	7

PURPOSE:

- Acquiring knowledge of various 2D drawing and Animation techniques used to effectively communicate design.

OBJECTIVES:

- To train students in the field of 2D drawing and Lay outting a Scene.
- To be able to use presentation skills as a tool towards effective visualization.

APPLICATION OF 2D ANIMATION PRINCIPLES

- Describe principle 'Stretch and Squash'
- Describe principle 'Timing and Spacing'
- Describe principle 'Ease in and Ease Out'
- Describe principle 'Arcs'
- Describe principle 'Follow Through and Overlapping'
- Describe principal 'Staging'
- Describe principal 'Anticipation'
- Describe principal 'Exaggeration'
- Describe principle 'Straight Ahead and Pose to Pose'
- Describe principle 'Solid Drawing'
- Describe principal 'Appeal'
- Describe principle 'Secondary Action'
- Describe Animate CC
- Identify Workspace
- Describe Windows and Panels
- Create documents using panels
- Identify Tools panel
- Describe Timeline
- Explain what is Onion Skin
- Move Play head
- Identify Layers
- Describe Keyframes
- Create Basic Shapes
- Apply Fills and Patterns to Graphic Objects
- Outline the types of Symbols
- Identify Symbols
- Describe the Library Panel
- Identify Filters
- Explain working with Filters
- Contrast the various types of Filters
- Explain about Motion Tween

- Describe Classic Tween
- Identify Shape Tween
- Outline using sound
- Describe adding Sound
- Explain Video
- Define Embedding a Video File
- Export the File
- Describe the importance of Adobe Animate CC and its interface
- Explain how to use Pin tool to create animation
- Explain how to edit keyframes in an animation
- Explain how to set timeline options for advertising
- Explain how to add sounds and videos in animations
- Discuss the down-level stage of publishing the animations

SESSION COVERAGE:

UNIT I: Introduction to Principles of Animation-1

- Introduction
- Stretch and Squash
- Timing and Spacing
- Ease in and Ease Out
- Arcs
- Animation Principles in Animate

UNIT II: Introduction to Principles of Animation-II

- Follow Through and Overlapping
- Staging
- Anticipation
- Exaggeration
- Animation Principles in Animate

UNIT III: Introduction to Principles of Animation-III

- Straight Ahead and Pose to Pose
- Solid Drawing
- Appeal
- Secondary Action
- Animation Principles in Animate

UNIT IV: Introduction to Animate CC

- About Animate CC
- About Workspace
- Manage Windows and Panels
- Using the Stage

UNIT V: Working with Timeline

- Understanding the Timeline
- Changing the Appearance of the Timeline
- Changing the Display Frames in the Timeline
- Onion Skinning
- Moving the Play head

UNIT VI: Understanding Layers and Keyframes

- Understanding Layers
- Using Keyframes

UNIT VII: Creating Basic Shapes and Working with Fills and Patterns

- Creating Basic Shapes
- Stroke and Fill
- Patterns

UNIT VIII: Working with Symbols

- Types of Symbols
- Editing Symbols
- Using Library Panels

UNIT IX: Working with Filters and Effects

- Understanding Filters
- Working with Filters
- Applying Filters

UNIT X: Creating Animations

- Understanding Motion Tween
- Understanding Classic Tween
- Understanding Shape Tween

UNIT XI: Working with Sound, Video, and Export

- Using Sound in Animate CC
- Importing Sound
- Adding Sound
- Using Videos in Animate CC
- Exporting the File

UNIT XII: Getting Started with Adobe Edge Animate CC

- Overview of Adobe Edge Animate CC
- Creating Animations
- Working with Sound and Video
- Publishing

SEMESTER – II

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF205	Audio - Video Editing & Digital Film Making	4	0	3	7

PURPOSE:

- Providing adequate knowledge of communicating Through Visual Shots and Fundamentals of editing.

OBJECTIVES:

- To impart Skills and Knowledge regarding Audio and Video editing and making them skill Ready.

AUDIO AND VIDEO EDITING – ADOBE AUDITION/AUDACITY AND ADOBE PREMIERE/DAVINCI RESOLVE

At the end of this module, the student will be able to:

- Define video editing
- Describe the different types of videos
- Describe linear and non-linear editing
- Describe online and offline editing
- List the different types of video standards
- Define the important terms related to video editing
- Describe video broadcasting
- List and describe the production equipment
- Identify the different stages of video making
- Describe each stage of video making
- Create a project
- Define a project
- Understand the new features of Adobe Premiere
- Customize the workspace
- Use the Project panel
- Utilize the Media Browser
- Use the Monitor panel
- Access the Resource Central
- Utilize the Metadata Panel
- Work on the Timeline panel
- Import libraries and projects
- Save a project
- Open a project
- Capture video from a DV or an HDV camera
- Set up scene detection, while capturing a video
- Batch capture a video

- Understand usage of a time code
- Prepare offline files
- View clip properties and data rate
- Understand metadata for various clips in a project
- Use various editing tools in Adobe Premiere
- Use the Monitor pan

SESSION COVERAGE:

UNIT I: Introduction to Digital Video Editing

- Video Editing
- Video Standards
- Video Terminology
- Stages of Video Making
- Adobe Premiere
- Basic Editing in Adobe Premiere Pro

UNIT II: Starting with Adobe Premiere Pro CS5.5

- Working with a project
- New Features
- Customizing Workspace
- Video Broadcast
- Video Compositing
- Project Panel
- Media Browser
- Monitor Panel
- Resource Central
- Metadata Panel
- Timeline Panel
- Importing Clips
- Saving and Opening a Project

UNIT III: Capturing Clips and Using Tools

- Video Capturing
- Batch Capturing Video and scene detection
- Time code
- Offline Files
- Clip Properties and Data rate
- Metadata
- Tools Panel

UNIT IV: Video Editing

- Working with Monitor Panel
- Working with Timeline Panel
- Working with Clips
- Adjusting trim clips in the Trim Panel
- Replacing Clips
- Merge Clips
- History Panel
- Working with Sequences
- Using Markers

UNIT V: Animating, effects, transitions and exporting Video

- Storyboards and Rough cuts
- Creating a Universal Lead Counter
- Previewing
- Animating in Adobe Premiere Pro
- Keyframes
- Effects
- Transitions
- Integration with Adobe Product
- Exporting Video and Still Images
- Exporting to DVD or Blue Ray Discs
- Exporting to Web and Mobile Devices
- Flash Video Export

UNIT VI: Integration with Adobe Products, animating and exporting

- Introduction to Audio
- Audio Mixer Panel
- Unlinking and Editing Audio
- Panning and Balancing
- Breaking Out Channels in Audio Clips
- Using a Mono Audio Clip as a Stereo Clip
- Applying Audio Effect
- Automating Audio Changes in the Audio Mixer Panel

UNIT VII: Creating Titles and Super Imposing

- Working with Adobe Title Designer
- Creating an Image in Adobe Title Designer
- Rolling and Crawling Titles
- Adding Title to a Project and Previewing the Same
- Opacity and Superimposing
- Changing the Opacity
- Using Keys

UNIT VIII: Introduction to Adobe Audition

- Fundamentals of Sound
- Understanding Adobe Audition Interface
- Adjusting Audio Preferences
- Creating and Opening Files

UNIT IX: Working with Audio Editing

- Editing Audio Clips
- Saving and Exporting Files
- Batch Process
- Converting Sample Type

UNIT X: What's New in Premiere Pro CC 7.0?

- New Features: Summary
- Workspace

UNIT XI: Editing Video

- Basic Workflow
- Adding, Rearranging, and Working with Clips in a Sequence
- Rendering and Previewing Sequences
- Overview of Audio and Audio Track Mixer
- Working with Clips, Channels, and Tracks
- About Effects - Applying, Removing, Finding, and Organizing Effects
- Viewing and Adjusting Effects, Keyframes, and Effects Presets
- Applying Transitions
- Audio Effects and Transitions

DIGITAL FILMMAKING

At the end of this module, the student will be able to:

- Explain Digital Filmmaking
- Explain the process of filmmaking
- Explain film language
- Explain script/screenplay/shooting script
- Explain previsualization
- Explain project planning
- Explain videotape standards
- Explain video compressions and resolutions
- Explain the process of choosing a computer system
- Describe the various features and functions of the cameras
- Explain the guidelines for evaluating and selecting the right camera for the project
- Use the camera
- Explain lighting for films
- Describe interior and exterior lighting
- Describe creative lighting for films
- List the types of microphones and headphones
- Explain the important terminology and aspects of audiography
- Explain the basics of editing
- List the various editing equipment
- Create a rough-cut
- Explain the phenomena of fine cutting and transitions
- Explain sync editing
- Explain the factors affecting color
- Explain the importance of monitor calibration
- Explain the factors affecting color
- Explain the importance of monitor calibration
- Explain videotape masters
- Explain the process of completing the audio mix
- Explain the process of creating a video CD

SESSION COVERAGE:

UNIT I: Introduction

- Introduction to Digital Filmmaking
- Process of Filmmaking
- Film Language
- Script/Screenplay/Shooting
- Script
- Previsualization
- Project Planning

UNIT II: Understanding Video Technology

- Introduction
- Videotape Standards
- Video Compressions and Resolutions
- Choosing a Computer System

UNIT III: Guidelines for Selecting a DV Camera

- Introduction
- Preparing Our Camera
- Types of Cameras
- Creative Cinematography
- Characterization Through Camera

UNIT IV: Basics of Lighting and Art Directing

- Introduction
- Lighting for Films
- Interior and Exterior Lighting
- Creative Lighting for Films
- Art Direction Basics

UNIT V: Dealing with Audio

- Introduction
- Types of Microphones and Headphones
- Important Terminology and Aspects of Audiographer

UNIT VI: Editing

- Introduction
- Editing Basics
- Editing Equipment's
- Creating a Rough Cut
- Fine Cutting
- Transitions
- Sync Editing

UNIT VII: Color Corrections and Monitor Calibration

- Introduction
- Factors Affecting Color
- Importance of Monitor Calibration

UNIT VIII: Types of Outputs

- Introduction
- Videotape Masters
- The Final Audio Mix
- Creating a Video CD, VCD
- DVD Authoring

SEMESTER – II

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF206	Project: Creating a 2D Animated Short Film \ Stop Motion Film \ Mix Media	0	0	4	4

PURPOSE:

- Understanding of the Animation process, and the connection of Different Stages to Achieve a Common output.

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OBJECTIVES:

- To sensitize students about the realization and value of the self.
- To provide exposure to students about their individual role in the larger realm.
- To enable students to be able to make value judgements.

Project: Creating 2D Animated Short Film\Stop Motion Film / Mix Media

At the end of this module, the student will be able to:

- Define the goals and objectives of a multimedia project
- List and explain the steps for the production of a multimedia application
- Explain how to create a detailed script for text, audio, and video
- List the members required in a multimedia production team
- Explain the role of a Production Manager
- Explain the different multimedia blocks in presentation
- List and explain the different phases in production process
- Explain the steps involved in creating a multimedia-based project
- Explain the steps involved in the production for 2D Animation Portfolio
- Explain the steps involved to run a movie in 2D Animation Portfolio.

SESSION COVERAGE:

UNIT I: Production of Short film

- Defining Multimedia Project
- Preparing for Production Scripts
- Building the Multimedia Production Team

UNIT II: Process of Short film

- Multimedia Blocks
- Production Process
- Project Conduct

UNIT III: Case Study

- Project Introduction
- Developing the Story Script for 2D Animation Portfolio
- Production

UNIT IV: Documentation

- Sample Project Documentation

SEMESTER – III

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF301	Environmental Studies	2	1	0	3

PURPOSE:

- Providing students with a foundation in various aspects of Science and Culture, which can be applied in the real world for Improvement.

OBJECTIVES:

- To understand the characteristics of environmental Elements and their application.

ENVIRONMENTAL STUDIES

- Environmental Studies-I

SEMESTER – III

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF302	Art of Storytelling, Storyboarding and Animatics	4	0	2	6

PURPOSE:

- Introducing students to the principles and elements of Storytelling and Presenting it in Visual frames.

OBJECTIVES:

- To understand the construction of basic elements of a Story and its Elements.

ART OF STORYTELLING & SCRIPT WRITING

At the end of this module, students will be able to:

- Discuss the basics of scriptwriting
- Discuss the advanced features of scriptwriting
- Discuss the basics and advanced features of scriptwriting
- Discuss the proposal outline of a film
- Discuss the different methods involved in writer's animation film treatment
- Describe the story outline for an animation film
- Discuss the ways to write a film script and draw a storyboard
- Discuss the composition of a creative outline
- Discuss the fields in the treatment of a commercial
- Discuss how a script for a commercial is written
- Discuss the audio elements of commercials
- Discuss the role of characters in animation commercials
- Create a commercial script with the help of a sample

SESSION COVERAGE:

UNIT I: Storytelling Techniques

- Introduction to Cartoon Animation Writing
- Introduction to Storytelling
- Adaptation
- Telling a Good Story
- Structuring a Story
- Writing a Story

UNIT II: Scriptwriting

- Introduction to Scriptwriting
- Basics of Scriptwriting
- Tips to Construct a Story
- Scriptwriting Format
- Scriptwriting Format Elements
- Modern Ways to Write Scripts
- Creating Scripts for Animation Films
- Creating Scripts for Commercials

STORYBOARDING AND ANIMATICS

At the end of this module, the student will be able to:

- Describe visual scripting/storyboarding
- Describe the purpose of storyboarding
- Identify the importance of storyboarding when creating a film
- Differentiate the paper and screen storyboards
- Identify the ways to manage a storyboard
- Describe concept and story making
- Discuss how to plan a presentation
- Discuss the importance of rough sketching before creating a storyboard
- Describe how to create a storyboard
- Explain various camera positions
- Discuss the camera lenses used in film making
- Describe lighting and filters
- Discuss staging
- Explain various scene to scene transitions

SESSION COVERAGE

UNIT I: Introduction to Animatics

- What are Animatics?
- Importance of Animatics
- Difference between Storyboards and Animatics
- Advantages of Enhancing Storyboards
- Application Areas of Animatics

UNIT II: Enhancing the Storyboard for Animatics

- Scanning Storyboards
- Importing Scanned Storyboards
- Enhancing the Lines

UNIT III: Using Colors in Storyboards

- Importance of Colors
- Psychology of Colors

UNIT IV: Coloring the Storyboards - I

- Coloring the Background
- Coloring the Character/Elements

UNIT V: Coloring the Storyboards - II

- Applying Hues and Tones
- Applying Shadows
- Enhancing Borders/Strokes

UNIT VI: Enhancing the Colored Storyboards

- Using Filters
- Preparing the Colored Storyboards for Animatics

SEMESTER – III

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF303	Digital Modeling with 3Ds Max	4	0	3	7

PURPOSE:

- Introducing students to materials and construction methodology.

OBJECTIVES:

- To understand the construction of basic elements of an interior space such as walls, partitions, floors and roofs.

DIGITAL MODELING WITH 3DS MAX

At the end of this module, the student will be able to:

- Describe the different modelling tools
- Describe the different interface elements
- Describe the different viewport elements
- Describe the Quad Menus
- List the 3ds max supportive file formats
- Describe the basics of Transformation and Group command
- Explain the use of Move, Rotate, and Scale tools
- Describe the alignment of objects relative to other objects
- List the different snapping techniques
- Describe the creation of group of objects using Group command
- Explain copy, instances, and references
- Describe the different functionalities of Mirror option
- List the different methods of working with Layers
- Explain the basics of Compound Objects
- List the different Compound Objects
- Describe the basics of lofts
- Explain how to edit loft objects
- Explain the concept of Low Poly Modelling
- Explain the process of editing the mesh at sub-object level
- Describe the basics of Low Poly Modelling
- Describe the basics of High Poly Modelling
- Explain the process of editing the mesh at sub-object level
- Describe the standard technique of High Poly Modelling
- Describe how to modify objects
- Describe how to create and deform objects by using the Modify panel manipulations
- Describe the different Object Space modifiers

- Describe the various Modelling Techniques
- Explain how to integrate Poly Modelling and Patch Modelling
- Describe how to create morph expressions

SESSION COVERAGE:

UNIT I: Overview

- Introduction to Modelling Tools
- Software Interface
- Viewport Size and Layout
- File Formats and Operations
- Creating and Modifying Objects
- Rendering
- Edit Commands

UNIT II: Transforming and Grouping

- Introduction
- Transformations
- Alignments
- Snapping
- Grouping and Ungrouping
- Cloning
- Mirroring and Array
- Layers
- Working with Shapes

UNIT III: Compound Objects

- Introduction
- Compound Objects
- Architectural Objects

UNIT IV: Low Poly and High Poly Modeling

- Introduction to Low Poly Modelling
- Objects and Sub-objects
- Basics of Low Poly Modelling
- Introduction to High Poly Modelling
- Objects and Sub-objects
- Standard Technique of High Poly Modelling

UNIT V: Modifying Objects

- Introduction
- Modifier Concepts
- Modifier Stack Display
- Object-Space Modifiers
- Shape Modifiers

UNIT VI: Integration of Various Modeling Techniques

- Introduction to Modelling Techniques
- Integration of Different Modelling Techniques
- Introduction to Morph
- Creating Morph Targets

SEMESTER – III

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF304	Lights, Camera and Materials using 3DS Max & V – Ray Rendering	4	0	2	6

PURPOSE:

- Inculcating environmental values in design through Light and rendering Materials.

OBJECTIVES:

- To enable students to realise and understand the multidisciplinary nature of the environment, its components, interrelationships between 3D design and environment and their impact on the built environment.

LIGHTS, CAMERA AND MATERIALS USING 3DS MAX & V – RAY RENDERING

At the end of this module, the student will be able to:

- Describe various concepts of Lights
- Describe the use of default max lights into a scene
- Describe the basics of max default lights
- Explain the process of lighting an environment with max default lights
- Discuss the basics of Cameras and different types of Cameras
- Describe the use of a Camera for a given scene
- List the important features of Cameras
- Explain Camera Correction Techniques
- Explain the basics of materials
- List the features of Material Editor
- Describe the use of coloured and textured surfaces applied on various objects
- List the options under the Material Editor
- Describe the various attributes in customizing the Material Editor
- Explain the process of manipulating options to create your own material
- Explain the default Max material types
- Explain the process of creating and animating the materials
- Describe the list of maps of different categories
- Explain the process of creating a normal map
- Describe the mapping coordinates for an object
- Describe the process of creating an object-based material
- Describe the process of understanding an object mesh flow
- Describe the process of unwrapping an object based on the flow of mesh
- Explain the necessary modification in the unwrapped mesh
- Describe the material manipulation method based on the given mesh object

SESSION COVERAGE:

UNIT I: Overview

- Introduction
- Concept of Lighting
- Creating Max Basic Lights

UNIT II: Lights

- Introduction
- Creating Max Lights in Interior and Exterior Environment

UNIT III: Understanding Cameras

- Introduction to Cameras
- Creating Cameras
- Multi-pass Effects
- Camera Correction Modifier

UNIT IV: Material Editor Part I

- Introduction
- Material Editor Basics
- Material Editor Buttons
- Customizing the Material Editor
- Basic Material Parameters
- Standard Materials
- Creating Materials

UNIT V: Material editor Part II

- Introduction
- Normal Mapping
- UVW Mapping

UNIT VI: Unwrapping

- Introduction
- Objects Mesh Flow
- Unwrapping Objects
- Modifying Unwrap

V – RAY RENDERING

Introduction - Rendering with V-Ray

- Identify steps to set up V-Ray
- Identify the difference in V-Ray and 3ds Max basic Renderer
- Identify types of V-Ray Lights
- Identify steps to create types of V-Ray Lights
- Modify parameters of V-Ray Lights
- Create a scene using V-Ray Materials
- Modify parameters of V-Ray Materials
- Create a scene using V-Ray Textures
- List the parameters available in Textures
- Describe the uses of different parameters available in Textures
- Create a scene using V-Ray Geometric objects
- Modify parameters of V-Ray Geometric objects
- Create a scene by rendering with V-Ray
- Create a scene using V-Ray Miscellaneous Plug-ins
- Modify parameters of V-Ray Miscellaneous Plug-ins

SESSION COVERAGE:

UNIT I: Getting started with V-Ray

- Introduction to V-Ray
- Introduction to V-Ray Features
- V-Ray Lights

UNIT II: V-Ray Materials and Textures

- V-Ray Materials
- V-Ray Textures

UNIT III: Geometric Objects and Rendering Session Contents:

- V-Ray Geometric Objects
- Rendering with V Ray

UNIT IV: Miscellaneous Plug-ins

- Miscellaneous Plug-ins

SEMESTER – III

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF305	Digital Compositing	4	0	3	7

PURPOSE:

- Providing students with knowledge of various Techniques of Compositing elements in 2d and 3d Space.

OBJECTIVES:

- To help students understand design development from Design to make it dynamic through motion and Sound.

DIGITAL COMPOSITING

At the end of this module, students will be able to:

Define compositing and various types of compositing

- List the system requirements for Adobe After Effects CC 2015
- Outline the general workflow of After Effects CC
- Recall the basic functionalities of Adobe After Effects CC Workspace
- Recognize the various panels available in the workspace
- Perform the Dock and Undock Panels operation in the workspace
- Create a composition for a project with appropriate parameters
- Articulate the process of importing digital assets
- Describe the Interpretation of Footages
- Perform “Add new Layers’ operation
- Apply concepts for selecting and arranging the Layers of a composition
- Explain how to manage Layers
- Elaborate the method of previewing Video and Audio
- Explain how to mark a Region of Interest
- Recall methods to take Snapshots of a Preview
- Describe Keyframes and Graph Editor
- Discuss about Keyframes
- Perform motion path effects
- Use motion blur effects
- Practice controlling the speed between keyframes
- Practice animation using Puppet tools
- Practice Fast-forwards/Slow-motion/Freeze effects in a video
- Describe Track Point fundamentals
- Explain the basics of Motion Stabilization
- Perform Rolling Shutter Repair Effects

- Perform Wrap Stabilizer Effects
- Recall the Motion tracking workflow
- Perform Motion tracking using Single Track point
- Perform Motion tracking using multiple Track points
- Describe the fundamentals of 3D Camera Tracker
- Analyse the footage and extracting camera motion
- Attach content into a scene containing a solved camera
- Perform Effects Controls for the 3D Camera Tracker
- Create text animations
- Apply animation effects
- Convert 2D layers to 3D layers
- Use Camera in 3D World
- Identify how to create the templates depending on the project
- Identify the best way to export and render the Composition using different formats
- Identify how to use the Render Queue panel

SESSION COVERAGE:

UNIT I: Getting started with Adobe After Effects CC

- Introduction to After Effects
- Setup and Installation of After Effects CC
- System Requirements After Effects CC
- General workflow in After Effects CC
- Adobe After Effects CC Workspace
- Menu Bar, Tool Bar, and Panels
- Dynamic Links
- Working with Other Applications
- Projects
- Composition

UNIT II: Adding Various Digital Assets and Previewing the Composition

- Importing Digital Assets
- Interpreting Footages
- Details of Files
- Switches and Columns
- Working on Digital Assets
- Arranging and Managing Layers
- Previewing the Composition
- Region of Interest
- Snapshots

UNIT III: Creating Animation Effects

- Animation Basics
- Keyframes
- Expressions
- Graph Editor
- Motion Paths
- Motion Blur
- Animating with Puppet Tools
- Time-based Effects

UNIT IV: Advanced Editing Techniques

- Motion Stabilization
- Motion Tracking
- Face Tracking
- 3D Camera Tracker

UNIT V: Text Animation and Animation Effects

- Applying Effects Using Present
- Masks
- Color Keying
- Working with Green Screen Footages
- Blending Modes
- Text Animation
- Particles

UNIT VI: 3D in After Effects, Previewing, and Rendering Output

- 3D in After Effects
- Previewing
- Rendering Process

SEMESTER – III

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF306	Project: Product Design with Compositing / Architectural Design in 3D with Camera Walkthrough / Mechanical Design with Animation	0	0	4	4

PURPOSE:

- Familiarizing students with Stages used in Mechanical/Architectural Design and their construction and detailing.

OBJECTIVES:

- To use knowledge of state-of-the-industry Textures and Materials in the design of Elements and presenting through Realistic rendering.

PROJECT: PRODUCT DESIGN WITH COMPOSITING / ARCHITECTURAL DESIGN IN 3D WITH CAMERA WALKTHROUGH / MECHANICAL DESIGN WITH ANIMATION

At the end of this module, students will be able to:

- List the profiles of a 3D Designing team
- State the different Designing stages
- Recognize client requirements
- Estimate the project budget
- Create script and storyboard
- Plan and schedule project
- Define the production stage
- Create a 3Dproject
- Compose the 3Dproject
- Publish the 3dproject

SESSION COVERAGE:

UNIT I: Production House Process

- Introduction to a Production House
- Team Members Profile
- 3D Animation Stages

UNIT II: Pre-Production

- Client Brief
- Research
- Create Story and Script
- Visualization
- Create Storyboard
- Planning and Scheduling

UNIT III: Production

- Modeling
- Materials
- Light and Camera
- Rendering

UNIT IV: Post Production

- Editing
- Compositing
- Adding Sound
- Publishing

SEMESTER – IV

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF401	Clay Modeling & Character Designing	2	0	2	4

PURPOSE:

- Introduction to the basics of designing for institutional interiors and to develop skills required for the same.

OBJECTIVES:

- To look at large scale spaces with an emphasis on planning for Institution interiors.
- To develop visually literate students who are proficient at analytical thinking, conceptualization and problem solving.
- To enable students to examine abstract design principles and their connection with the physical environment.

ASSIGNMENTS:

- Creating a 3D Character
- Creating an Asset,
- Character Animation Sequence

JOB PROFILES APPLICABLE:

- 3D Character Designer
- 3D Animator
- 3D Texturing Artist
- 3D Rigging Artist

REFERENCE BOOKS:

- A Manual of Clay-Modelling (Yesterday's Classics) by Mary Louisa Hermione Unwin (Author)
- Beginner's Guide to Character Creation in Maya by 3dtotal Publishing (Author).
- Autodesk Maya 2018: A Comprehensive Guide by Sham Tickoo / TIET (Author).
- Advanced Maya Texturing and Lighting by Lee Lanier (Author).
- 3D Animation Essentials (Essentials (John Wiley) by Andy Beane (Author).
- Web Link: <http://golaem.com/content/product/golaem>

CLAY MODELING

At the end of this module, the student will be able to:

- Explain the history of stop motion animation
- Describe the functioning of the stop motion industry
- Explain various types of cameras
- Describe the use of lens in cameras
- Describe tripod and its head
- Explain the use of lighting for Claymation animation
- Describe the history of Claymation
- Identify the types of Claymation
- Describe the types of clay
- Describe building of puppets
- Explain how to secure sets
- Describe the types of sets
- Describe props used in stop motion animation
- Explain the working of Stop Motion Pro
- Describe the making of an animation using Stop Motion Pro
- Create a puppet animation with different poses
- Make a puppet walk Animate the throwing action of a character
- Animate facial expressions of a character
- Animate dialogs of a puppet
- Add motion blur in stop motion animation

SESSION COVERAGE:

UNIT I: Stop Motion Animation - Overview

- History of Stop Motion Animation
- Claymation - History
- Basic Elements to Create Stop Motion Animation

UNIT II: Modeling with Clay

- Building Puppets
- Setting the Stage

UNIT III: Creating Animation in Stop Motion Pro Session Contents:

- Stop Motion Pro - Overview
- Make Your First Animation

UNIT IV: Animating a Puppet

- Puppet Animation
- Action Analysis
- Facial Expressions
- Dialog
- Motion Blur
- Visual Effects

SEMESTER – IV

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF402	3D Modeling & Texturing	4	0	2	6

PURPOSE:

- Understanding the importance of Modelling and fine Details in the design of Assets and Characters. Understanding their designs, processes of manufacture and methods of Modelling and texturing.

OBJECTIVES:

- To study materials and textiles used as furnishing - natural and manmade - their scope and limitations and their impact on 3D Model.

3D MODELING - MAYA

At the end of this module, the student will be able to:

- Explain the concept of 3D Modelling
- Explain User Interface
- Explain the Transforms in 3D Modelling
- Explain the Snapping Hotkeys
- Explain the Channel Box and Layer Editor feature
- Explain NURBS primitives
- Describe NURBS surfaces by using Revolve tool
- Describe the use of the Sculpt Geometry tool while editing NURBS Primitives
- Explain the process of trimming
- Explain the process of stitching
- Explain sculpt surface meshes
- Describe the menu options under the NURBS menu
- Describe the various modes available in NURBS Primitives
- Explain what is polygon
- Explain polygon modelling
- Explain polygon primitives
- Explain components of polygon
- Explain polygon shape nodes
- Explain attributes manipulating polygons to make desired shapes
- Explain good polygon workflow
- Explain maintaining line-flow
- Explain how to avoid n-gon's in modelling
- Explain an overview of subdivision surfaces
- Explain standard mode and polygon proxy mode
- Explain subdivision surface conversion

- Explain editing subdivision surfaces
- Explain deformer
- Explain types of deformers
- Explain how deformer brings change to the shape of an object
- Explain the deformation tools
- Explain how to edit subdivision surfaces
- Explain organic and inorganic modelling
- Explain features of organic and inorganic modelling
- Understand shapes, sizes, and textures of organic models
- Explain the anatomical study of organic modelling
- Understand and implement the references used for inorganic modelling

SESSION COVERAGE:

UNIT I: Introduction to 3D Modeling

- Introduction to 3D Modelling
- Features of 3D Modelling
- 3D Modelling User Interface
- Transforms in 3D Modelling

UNIT II: NURBS Modeling

- Introduction to NURBS Modelling
- Creating NURBS Primitives
- Edit NURBS Primitive Using Sculpt Geometry Tool
- NURBS Curves and Surfaces
- Trimming
- Stitching
- Sculpting Surface Meshes

UNIT III: Polygon Modeling

- Introduction to Polygon
- Polygon Modelling
- Polygon Primitives
- Components of Polygon
- Polygon Nodes
- Polygon Workflow
- Maintaining Line -Flow and Ngon's in modelling
- Choosing Triangles Over Quads

UNIT IV: Subdivision Modeling

- Introduction to Subdivision Modelling
- Subdivision Surface Conversion
- Editing Subdivision Surface

UNIT V: Organic and Inorganic Modeling Session Contents:

- Introduction to Organic Modelling
- Shapes of Organic Modelling
- Anatomical Study of Organic Modelling
- Introduction to Inorganic Modelling
- Techniques Used in Organic Modelling

TEXTURING - MAYA / SUBSTANCE PAINTER

At the end of this module, the student will be able to:

- Understand what are textures
- Differentiate between textures and materials
- Understand process of texturing in Maya
- Select appropriate textures based on various factors
- Use Hyper shade Window
- Use Hyper shade Editor
- Understand different materials
- Shade with surface materials
- Shade with volumetric materials
- Shade with displacement materials
- Use different types of 2D textures
- Understand environment textures
- Use types of 3D textures
- Map UVs to objects
- Create UV Sets
- Normalize UVs - Edit UVs
- Relax and Untangle UVs
- Separate UVs - Attach UVs
- Wrap image
- Map textures onto objects
- Create texture maps
- Assign a texture to a material
- Position textures
- Modify textures applied to a surface
- Import image file as texture
- Explain the basic concepts of lights in Maya 2015
- Identify the common light attributes
- Define the color and intensity for a light source
- List and explain the different types of lighting techniques available in Maya 2015
- Explain the basic techniques of lighting
- Define the importance of shadows
- Describe the process involved in creating realistic shadows
- Classify various light effects and the application of special effects to lights
- Explain rendering and its techniques
- Apply the Common Render settings
- Define and use the tools in the Render window
- Explain Batch rendering
- Describe the different render engines in Maya and their settings

- Identify the importance of Mental Ray and its usage in 3D production
- Describe realistic output using Mental Ray
- Identify the concept of Mental Ray Shaders Explain Batch rendering
- Identify and create Mood Lighting
- Classify Day and Night Lighting
- Explain how to revise or tweak textures according to lighting
- Explain the different types of Render Passes

SESSION COVERAGE:

UNIT I: Introduction to Texture

- Understanding Textures
- Textures in Maya
- Selecting Textures
- Hyper shade

UNIT II: Materials and Textures

- Surface Materials
- Volumetric Materials
- Displacement Materials
- 2D and 3D Textures

UNIT III: UV Mapping and Texture Mapping

- UV Mapping
- UV Texture Editor
- Wrap Image
- Mapping Textures

UNIT IV: Maya Lighting

- Lights in Maya 2015
- Techniques for Lighting
- Creating High Quality Shadows and Lighting Effects

UNIT V: Rendering

- Render Setting
- Render Engine
- Mental Ray and Mental Ray Shaders

UNIT VI: Advanced Lighting and Rendering

- Mood Lighting
- Texture Tweaking According to Lighting
- Rendering in Passes

SEMESTER – IV

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF403	Lighting Models	4	0	2	6

PURPOSE:

- Inculcating environmental values in design.

OBJECTIVES:

- To enable students to understand how Lighting can affect the Presentation and Mood of the Scene.
- To be able to evaluate the performance of a project for future reference.

LIGHTING MODELS - MAYA

At the end of this module, the student will be able to:

- Describe the basic light properties available in Maya
- Explain the types of lights and shadows available in Maya
- Explain the principle of three-point lighting
- Understand the placement and uses of the three lights, namely, key light, fill light, and back light
- Explain the importance of Back light\Rim light
- Explain the process of creating cast shadows
- Explain the concept of mood light setup
- Explain the three-point lighting setup used in visual media and its importance in comprehending and executing lighting
- Explain the importance of back light while lighting a daylight scene
- Create the background of a daylight setup using sunlight, fill lights, rim lights, and highlights
- Create a character light setup for a daylight scene based on the background
- Create a cast shadow, pre-composite a background and character
- Plan a night light setup
- Create moonlight
- Use fill and bounce lights
- Merge different range of colors for creating nightlight
- Create a day and night light setup for an interior room
- Explain the mental ray user interface
- Explain the important features of mental ray
- List the basic features of Global illumination
- Light an exterior background using Global illumination and Final gather
- Explain the important features of MR shaders
- Use MR shaders for shading a background in Maya

- Use MR shaders for creating skin shaders in Maya
- Explain the basic features of global illumination and final gather
- Explain the process of lighting an interior background using global illumination
- Explain the features of ambient occlusion
- Explain the fundamentals of High Dynamic Range Imaging with examples
- Explain the importance of placement of lights and cameras and appearance of shadows while creating a scene using live plates
- Explain the process of merging a live plate and 3D object and perform color correction in Photoshop to derive at the final composited output
- Explain the basics of reflective and refractive caustics

SESSION COVERAGE:

UNIT I: Introduction to Standard Lights and Shadows

- Introduction
- Basic Properties of Lights in Maya
- Types of Lights in Maya
- Types of Shadows in Maya

UNIT II: Three-Point Lighting

- Principle of Three-point Lighting
- Planning the Setup
- Lighting the Character
- Shadows
- Important Tip on Light Setup

UNIT III: Day Lighting-Exterior

- Introduction
- Creating a Day Light Setup on a Background
- Using Fill Lights
- Use of Rim and Hi Lights for the Background
- Character Lighting Setup based on the Background
- Pre-Compositing Character and Background

UNIT IV: Night Lighting-Interior

- Lighting the Background
- Creating a Moonlight Setup of an Interior Background

UNIT V: Day and Night Lighting Passes

- Introduction
- Planning Light Sources in a Night Light Setup
- Creating Night Lighting Setup using Passes
- Planning Light Sources in a Daylight Setup
- Creating Day Light Setup with the Help of Passes

UNIT VI: Introduction to Mental Ray: Global Illumination & Final Gather

- Introduction to Mental Ray
- User Interface of Mental Ray
- Important Features of Mental Ray
- Lighting a Background using Global Illumination
- Basic Concepts of Photons and Global Illumination Photons

UNIT VII: Mental Ray Shaders

- Introduction to Mental Ray Shaders
- Basic Properties of MR Shaders
- Using Mia Shaders for a Background
- Sub Surface Scatter (SSS) Material

UNIT VIII: Mental Ray - Final Gather and Ambient Occlusion

- Introduction
- Important features of Global Illumination and Final Gather
- Lighting an Interior Background using

UNIT IX: Image Based Lighting

- Introduction to HDRI
- Lights and Shadows in the Live Plate
- Adjusting the Camera as per the Live Plate
- Shading and Lighting for the Cyborg Character
- Color Correction

UNIT X: Mental Ray - Reflective and Refractive Caustics

- Introduction
- Basics of Caustics
- Refractive Caustics
- Reflective Caustics

UNIT XI: Mental Ray Physical Sun

- Creating Physical Sky and Sun
- Creating Physical Sky and Sun
- Render Settings
- Aspects of Physical Sun and Sky
- Tone Mapping
- Physical Sky and Sun Nodes

UNIT XII: Background and Character Lighting with Passes

- Introduction to Render Elements
- Understanding Mood
- Mental Ray Setup
- Lighting a Background and Rendering in Passes
- Character Render Passes
- Fine Tuning the Output

SEMESTER – IV

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF404	Rigging of 3D Character	4	0	2	6

PURPOSE:

- Providing students with knowledge of Rigging Techniques and Creating Controls on a 3D Modelled Element.

OBJECTIVES:

- To familiarize students with the different techniques of rigging and Movement affecting various parts of Model.

RIGGING OF 3D CHARACTER - MAYA

At the end of this module, the student will be able to:

- Define rigging
- Describe the elements of rigging
- Describe joint hierarchies
- Create joint hierarchies
- Change joint display size
- Name joints
- Mirror joints
- Orient joints
- Connect and disconnect a joint chain
- Apply IK
- Apply FK
- Apply FBlK
- Describe the binding geometry
- Describe the types of binding
- Apply skin weights
- Copy skin weights
- Use Maya Muscle System

SESSION COVERAGE:

UNIT I: Introduction to Rigging

- Rigging
- Elements of Rigging

UNIT II: Joint Hierarchies

- Introduction to Joint Hierarchies
- Creating a Joint Hierarchy
- Gimbal Lock
- Joint display Size
- Adding Extra Joints
- Orienting Joints
- Naming Joints
- Mirroring Joints
- Connecting and Disconnecting a Joint Chain
- Redroot Skeleton

UNIT III: Inverse Kinematics and Forward Kinematics

- IK
- IK Handles and Solvers
- FK
- Constraints
- Full Body Inverse Kinematics (FBIK)
- Custom Attributes

UNIT IV: Skinning Geometry and the Maya Muscle System

- Introduction to the Skinning Geometry and the Maya Muscle System
- Binding Geometry
- Skin Weights
- Maya Muscle System
- Sliding Weights
- Collision

SEMESTER – IV

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF405	Animation & Crowd Simulation	4	0	2	6

PURPOSE:

- Introducing students to concepts and principles of various Animation Techniques that affects the Whole Character.

OBJECTIVES:

- To enable students to integrate various Techniques effectively with the Animation Production Process.

ANIMATION - MAYA

At the end of this module, the student will be able to:

- Explain the 12 principles of animation in Maya
- Explain timeline controls in Maya
- Describe how to animate using keyframe animation
- Explain Graph Editor and animate keys
- Explain animation control menus
- Discuss basics of deformers
- Describe how to create deformers
- Describe Non-linear deformers
- Describe how to edit deformers
- Describe Grease Pencil tool
- Describe how to prepare for an action
- Describe how to create poses for a weight lift
- Describe how to create anticipation of weight lift
- Describe how to time a weight lift
- Describe how to create poses for a walk cycle
- Describe how to time a walk cycle
- Describe how to manipulate body weight while walking
- Describe how to create secondary action and delay during a walk cycle
- Describe how to create poses for run cycle
- Describe how to create poses for weight push
- Explain the sound track
- Describe how to blend dialogues with facial movement
- Describe how to create blend shapes
- Describe how to edit blend shapes
- Describe how to create different mouth shapes
- Explain how to synchronize lips
- Describe how to synchronize head to the dialogues and expression

SESSION COVERAGE:

UNIT I: Principles of Animation and Keyframe Animation

- Animation Principles
- Timeline
- Keyframe Animation

UNIT II: Animation Tools and Deformers

- Graph Editor and Animate Keys
- Animation Control Menus
- Deformers
- Create Deformers
- Non-linear Deformers
- Edit Deformers
- Grease Pencil Tool

UNIT III: Character Animation

- Preparing for an Action
- Poses for a Weight Lift
- Anticipation of Weight Lift
- Timing for a Weight Lift
- Walk Cycle Poses
- Timing of a Walk Cycle
- Body Weight When Walking
- Secondary Action and Delay
- Poses for Run Cycle
- Poses for Weight Push

UNIT IV: Facial Animation

- Sound Track
- Dialogue Delivery
- What are Blend Shapes?
- Using Blend Shapes
- Different Mouth Shapes
- Lip Synchronization
- Head Sync

CROWD SIMULATION - GOLAM CROWD

At the end of this module, the student will be able to:

- Understand Golaem Crowd and its features
- Explore all the tools of Golaem, their interfaces and uses
- Define the platform requirements of GolaemCrowd
- Understand the steps involved in the deployment of GolaemCrowd
- Recognize the different file formats in Golaem
- Understand the main concepts in Golaem Crowd like Entities, Behaviours and Crowd characters
- Understand the detailed workflow of GolaemCrowd
- Explore the geometry and configuration of the NavMesh Creator and learn how to export it
- Understand the Terrain Locator and its attributes
- Understand the Physics Locator and its attributes
- Understand the Cloth Locator and its attributes
- Understand the Flock Locator and its attributes
- Understand the Crowd Field creation, its connection with particles and its attributes
- Understand the Crowd Manager creation and its attributes
- Understand the Crowd Archiver creation and its attributes
- Understand Behaviours in Golaem and explore the creation, configuration and attributes of the different behaviours available in Golaem
- Explore the different Golaem Behavior Operators
- Explore the various Golaem Behavior Locators
- Understand the CrowdSimulationExporter, SimulationCache, the Export command, naming convention and Cache format and the various Simulation parameters that are available depending on the type of export
- Understand the Simulation Cache Proxy, its creation and attributes
- Understand the Rendering Workflow
- Explore the different renders which are Mental Ray, V-Ray, Arnold and Render Man Studio

SESSION COVERAGE:

UNIT I: Introduction to Texture

- Introduction to Golaem
- File Formats
- Main Concepts
- Golaem Crowd Workflow
- Asset conversion
- Character Mode

UNIT II: Environment

- NavMesh Creator
- Terrain Locator
- Physics Locator
- Cloth Locator
- Flock Locator

UNIT III: Simulation and Behaviors

- Crowd Field
- Crowd Manager
- Crowd Archiver
- Behaviors
- Behavior Operators
- Locators

UNIT IV: Simulation Export and Render

- Simulation Exporter
- Simulation Cache Proxy
- Rendering Workflow
- Various Renders

SEMESTER – IV

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF406	Project: Creating a 3D Animated Sequence / Creating Asset for Games / Creating a 3D Set	0	0	5	5

PURPOSE:

- Exposing students to the basics of creating a Production based 3D Animated Project.

OBJECTIVES:

- To enable the student to understand the need for adaptive use of all required Production Stages into one and giving Hands on experience in that.

PROJECT: CREATING A 3D ANIMATED SEQUENCE / CREATING ASSET FOR GAMES / CREATING A 3D SET

At the end of this module, students will be able to:

- List the profiles of a 3D animation team
- State the different animation stages
- Recognize client requirements
- Estimate the project budget
- Create script and storyboard
- Plan and schedule project
- Define the production stage
- Create a 3Dproject
- Compose the 3Dproject
- Publish the 3dproject

SESSION COVERAGE:

UNIT I: Production House Process

- Introduction to a Production House
- Team Members Profile
- 3D Animation Stages

UNIT II: Pre-Production

- Client Brief
- Research
- Create Story and Script
- Visualization
- Create Storyboard
- Planning and Scheduling

UNIT III: Production

- Modeling
- Materials
- Light and Camera
- Rigging
- Animation

UNIT IV: Post Production

- Editing
- Compositing
- Adding Sound
- Publishing

SEMESTER – V

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF501	Introduction to Production Pipeline	2	0	0	2

PURPOSE:

- Equip students with knowledge of various types of Production techniques and understanding their effect on certain Projects.

OBJECTIVES:

- To help students understand the concept of Animation Film Production and the technology to equip students to understand and successfully apply various techniques.

INTRODUCTION TO PRODUCTION PLANNING

SESSION COVERAGE:

UNIT I: Tracking

- Statuses
- Filter Panel
- Advanced filtering
- Sorting and grouping
- Time Logs
- Global search

UNIT II: Scheduling

- Tasks and Pipeline Steps
- My Tasks
- Gantt Chart and Tasks
- Tracking bids and logging time
- Inbox and following

UNIT III: Review and Approval

- Submitting your work
- Overlay Player
- Image Attachment Viewer
- Notes
- Review Notes
- Media App and Playlists
- Client Review Site overview for Clients
- Client Review Site overview for Shotgun users
- RV
- Use of RV
- Submit Tool
- Screening Room for RV preferences

SEMESTER – V

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF502	Previsualization using iClone	2	0	2	4

PURPOSE:

- Introducing the basics of designing for retail spaces.

OBJECTIVES:

- To look at different types of commercial spaces with an emphasis on planning for health and hospitality.
- To develop visual literacy in students and make them proficient at thinking analytically, at being able to resolve problems and being able to conceptualize.
- To enable students to examine abstract design principles and apply them in physical and visual environments.

ASSIGNMENTS:

- Creating a 3D Animated Sequence,
- Creating a Fx Shot
- Fire, Blast and Particles.

JOB PROFILES APPLICABLE:

- Pre-Viz Artist
- FX Artist
- 3D Animator
- 3D Sculpting Artist

REFERENCE BOOKS:

- iClone 4.31 3D Animation Beginner's Guide by M.D. McCallum (Author)
- Practical Maya in Post Production: Dynamic FX Setups by Eric Ebling (Author)
- Beginner's Guide to ZBrush by 3dtotal Publishing.
- Production Pipeline Fundamentals for Film and Games by Renee Dunlop (Author).
- Web Link: <https://www.autodesk.in/solutions/photogrammetry-software>

PRE-VISUALIZATION USING ICLONE:

At the end of this module, the student will be able to:

- Recall movie making process
- Define Pre-visualization
- Classify the types fore-visualization
- List the software available for Pre-visualization
- Distinguish between Pre-visualization and Animatics
- List various steps of Pre-visualization Development Process
- Explain each step of Pre-visualization Development Process
- Recognize the menus, shelf, and other options used in Pre-visualization
- Development Process

SESSION COVERAGE:

UNIT I: Fundamentals of Pre-visualization

- Movie Making Process
- Pre-visualization Society
- Pre-visualization
- Types of Previz
- Medium of Previz
- Previz Team
- Pre-visualization vs. Animatics
- Tools Used in Previz

UNIT II: Pre-visualization Using Maya

- Script Development
- Storyboard Development
- Animatics
- 3D Modeling of Characters and Location
- Rigging of Characters
- Animation
- Setting of Scene and Referencing the Characters
- Creating and Placing Cameras
- Rendering the Shots
- Integrating Sound/Audio
- Editing and Color Correction

SEMESTER – V

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF503	FX Dynamics and Simulation	2	0	2	4

PURPOSE:

- Providing students with a foundation in the techniques of drafting using computer as a tool for Creating Artificial simulations and FX.

OBJECTIVES:

- To introduce terminology used in computers and enable students to understand their technology.
- To develop an understanding about the applications of software and graphic systems.

FX DYNAMICS AND SIMULATION

At the end of this module, the student will be able to:

- Describe Paint Effects Canvas
- Describe Paint Effects Interface
- Explain how to Paint a Scene
- Explain how to Paint on Canvas
- Describe various types of brushes
- Describe various tube controls
- Explain how to add flowers, leaves, branches, and tendrils
- Apply force, displacement, and turbulence to strokes
- Identify various methods to animate strokes
- Identify methods to animate growth and modifiers
- Describe Render Paint Effects strokes in Maya software
- Apply particles and dynamics
- Create nCloth objects
- Create hair and fur
- Explain how to simulate fur with the help of Hair System
- Understand how to animate fur using key frames
- Understand how to set Dynamic forces such as Gravity and Wind to the fur

SESSION COVERAGE:

UNIT I: Introduction to Paint Effect and Dynamics

- Introduction
- Paint Effect Canvas
- Paint Effect Interface
- Painting Scene
- Brush Animation

UNIT II: Paint in 2D and 3D

- Brushes
- Applying Forces
- Applying Displacement and Spiral Bend
- Animating Strokes
- Adding Turbulence
- Animating Growth and Modifiers
- Adding Growth

UNIT III: Rendering Paint Effect

- Introduction
- Illumination
- Shading
- Shadow
- Texturing
- Converting Strokes to Geometry
- Cartoon Fills and Outlines

UNIT IV: Maya Dynamics

- Introduction Dynamics
- Particles
- Fields
- Fluid
- Active Body & Passive Body
- Constraint in Maya

UNIT V: Maya Dynamics - Clothing

- Creating Clothing for Character
- Create Passive Collider
- Dynamic Properties
- Creating Cloth and Particles Interaction

UNIT VI: Introduction to Hair in Blender

- Hair Overview
- Hair Creation
- Adding Hair to Character
- XGen in Maya
- Work with Clump Modifiers
- Collisions
- Dynamic Properties

UNIT VII: Hair Simulation and Rendering

- Simulating Hair
- Hair Modifications
- Hair Rendering

UNIT VIII: Introduction to Fur in Blender

- Introduction Fur
- Fur Creation and Modification
- Adding Fur to Character

UNIT IX: Advance Fur System, Animation and Rendering

- Advanced Fur System Modification
- Animation
- Fur Movement
- Shading Effects
- Rendering Fur

UNIT X: Bifrost, Boss Simulation and Bullet Physics

- New Simulation Tools: Bifrost And Viewport 2.0
- Boss Ocean Simulation
- Bullet Physics

SEMESTER – V

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF504	Digital Sculpting using Zbrush	2	0	3	5

PURPOSE:

- Introducing concepts and principles of various building services that need to be taken care of while designing interiors.

OBJECTIVES:

- To enable students to integrate various services effectively with the interior.

DIGITAL SCULPTING USING ZBRUSH

At the end of this module, the student will be able to:

- Understand Digital Sculpting and its scope
- Understand with the interface and basic tools in ZBrush
- Understand the basics of Sculpting
- Use ZBrush in character creation process
- Understand advanced tools and techniques of sculpting
- Understand retopologizing tools and techniques in ZBrush
- Understand hard surface modelling
- Build landscapes using procedural modelling
- Generate texture maps
- Understand various texturing techniques
- Add Lights and Backgrounds for effective Renderings

SESSION COVERAGE:

UNIT I: Getting Started with ZBrush

- Introduction to Digital Sculpting
- Getting Started with the ZBrush Interface
- Getting Ready for Sculpting

UNIT II: Digital Sculpting and Retopologizing

- Character Sculpting
- Sculpting using Advance Tools
- Retopologizing

UNIT III: Hard Surface Modeling, Texturing and Rendering

- Hard Surface Modeling
- Texturing and Polly painting
- Lights and Rendering

SEMESTER – V

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF505	Working with Photogrammetry	2	2	2	6

PURPOSE:

- Facilitating transfer of knowledge and skills to students on estimating, analysing geographical and visual details to create 3D based Objects and Textures using the Technique.

OBJECTIVES:

- To equip students to prepare the estimate and Creating their own realistic 3D Textures and Planes.

WORKING WITH PHOTOGRAMMETRY

Photogrammetry is an ingenious technique for 3D scanning. You can capture large objects, like buildings or even mountains that would be impossible to scan using other methods. Moreover, photogrammetry is also affordable since you probably already own the most important piece of equipment: Your Smartphone camera. All that's left is photogrammetry software to create a 3D file of the object you have photographed.

SESSION COVERAGE:

UNIT I: Using Natural Feature Extraction

UNIT II: Image Matching

UNIT III: Features Matching

UNIT IV: Structure from Motion

UNIT V: Depth Maps Estimation

UNIT VI: Meshing

UNIT VII: Texturing

UNIT VIII: Localization

SEMESTER – V

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF506	Project: Creating a 3D Animated Shot \ Creating a Shot of Destruction with FX	4	2	6	12

PURPOSE:

- Exposing students to the basic principles of acoustics in interiors.

OBJECTIVES:

- To understand the need and application of acoustics in buildings.
- To provide exposure to students on various systems, methods and fixtures.

PROJECT: CREATING A 3D ANIMATED SHOT / CREATING A SHOT OF DESTRUCTION WITH FX

At the end of this module, students will be able to:

- List the profiles of a 3D animation team
- State the different animation stages
- Recognize client requirements
- Estimate the project budget
- Create script and storyboard
- Plan and schedule project
- Define the production stage
- Create a 3Dproject
- Compose the 3Dproject
- Publish the 3dproject

SESSION COVERAGE:

UNIT I: Production House Process

- Introduction to a Production House
- Team Members Profile
- 3D Animation Stages

UNIT II: Pre-Production

- Client Brief
- Research
- Create Story and Script
- Visualization
- Create Storyboard
- Planning and Scheduling

UNIT III: Production

- Modelling
- Materials
- Light and Camera
- Rigging
- Animation

UNIT IV: Post Production

- Editing
- Compositing
- Adding Sound
- Publishing

SEMESTER – VI

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF601	History of VFX & Creating a Matte Painting with 3D Projection	3	0	2	5

PURPOSE:

- Imparting knowledge about Matte paintings used in VFX Industry.
- Exposing students to latest technique of 3D Projection for the VFX industry.

OBJECTIVES:

- To study and develop innovative ideas for creating realistic Matte paintings along with the knowledge of projecting them in 3D Layout.

ASSIGNMENTS:

- Matte Painting
- Projection Mapping
- Compositing
- Creating Two shots of Match move and Rotomation
- Two shots of Rotoscope

JOB PROFILES APPLICABLE:

- Match move Artist
- Roto mation Artist
- Rotoscopy Artist
- Compositor

REFERENCE BOOKS:

- The Digitization of Cinematic Visual Effects: Hollywood's Coming of Age by Rama Venkatasawmy (Author).
- The Foundry Nuke X 7 for Compositors by Prof. Sham Tickoo Purdue Univ.
- Digital Compositing with Nuke by Lee Lanier (Author).
- Image Beyond the Screen: Projection Mapping (Science, Society and New Technologies) by Daniel Schmitt (Editor), Marine Thébault (Editor), LudovicBurczykowski (Editor)

HISTORY OF VFX

A Sense of Pre-CGI VFX History and context can help understand where we are now, culturally as well as technologically, and can open new insights into the current practice.

VFX has been surprising us since Alfred Clarke's Stop action beheading of Mary Queen of Scots in 1895, through Melies, Murneau and Lang to O'Brien's King Kong, Harryhausen's fighting skeletons, Trumbull's gravity free atmosphere in 2001: A Space Odyssey, technical innovations from Ed Catmull and Aivy Ray Smith, through Tron and Star Wars into the Digital era with John Gaeta's Bullet time and John Knoll's Avatar.

At the end of this module, students will be able to:

- Explain about the History of Visual Effects in Films

UNIT I: History of VFX in Films (1895-1999)

- Videos
 - Watch any 5-10 Videos and discuss about it in Class.
 - Alfred Clarke's Stop action beheading of Mary Queen of Scots (1895)
 - Un Homme de Tete (1898)
 - Joker Film "Narren-Grappen" (1910)
 - King Kong (1933)
 - Mighty Joe Young (1949)
 - The Ten Commandments (1956)
 - The 7th Voyage of Sindbad (1958)
 - Jason and the Argonauts (1963)
 - Mary Poppins (1964)
 - 2001: A Space Odyssey (1968)
 - King Kong (1976)
 - Star Wars (1977)
 - Star Wars: The Empire Strikes Back (1980)
 - Tron (1982)
 - Blade Runner (1982)
 - Star Wars: Return of the Jedi (1983)
 - Indiana Jones and the Temple of Doom (1984)
 - The Terminator (1984)
 - Back to the Future (1985)
 - Robocop (1988)
 - The Abyss (1989)
 - Total Recall (1990)
 - Terminator 2: Judgment Day (1991)
 - Jurassic Park (1993)
 - Titanic (1997)
 - Saving Private Ryan (1998)
 - The Matrix (1999)

UNIT II:History of VFX in Films (2000-2018)

- Videos
 - Watch any 5-10 Videos and discuss about it in Class.
 - Lord of the Rings: The Fellowship of the Ring (2001)
 - Lord of the Rings: The Two Towers (2002)
 - Star Wars: Episode II - Attack of the Clones (2002)
 - Terminator 3: Rise of the Machines (2003)
 - The Matrix Reloaded (2003)
 - The Matrix Revolutions (2003)
 - Lord of the Rings: The Return of the King (2004)
 - 300 (2006)
 - Pirates of the Caribbean: At World's End (2007)
 - Avatar (2009)
 - Inception (2010)
 - Rise of the Planet of the Apes (2011)
 - The Avengers (2012)
 - Life of Pi (2012)
 - Gravity (2013)
 - World War Z (2013)
 - Iron Man 3 (2013)
 - Captain America: The Winter Soldier (2014)
 - 300: Rise of the Empire (2014)
 - Guardians of the Galaxy (2014)
 - Dawn of the Planets of the Apes (2014)
 - The Amazing Spiderman 2 (2014)
 - Transformers: Age of Extinction (2014)
 - Star Wars: The Force Awakens (2015)
 - Jurassic World (2015)
 - The Martian (2015)
 - Avengers: Age of Ultron (2015)
 - Deadpool (2016)
 - The Jungle Book (2016)
 - Captain America: Civil War (2016)
 - Doctor Strange (2016)
 - Rogue One: A Star Wars Story (2016)
 - Thor: Ragnarok (2017)
 - Kong: Skull Island (2017)
 - Star Wars: The Last Jedi (2017)

CREATING A MATTE PAINTING WITH 3D PROJECTION

At the end of this module, the student will be able to:

- Explain the concept of Matte Painting
- working out the perspective drawing, adding light and shadow, and texturing all of the elements in the painting.
- Understands the technique of freehand painting
- Creating a 3D Scene with reference to an image or matte painting
- Merging 3D objects with reference to an image
- Understanding material properties and merging shaders
- Project textures and Know to apply and lights and shadows.
- Importing cameras from boujou
- To operate Transformation handle and transform geo node
- import channel files and apply the motion data to the transformation parameters of any camera or object
- Adding motion blur using Scanline render and using Vector Blur.
- Rendering a 3D Scene using projection mode.

INTRODUCTION TO NUKE /NATRON

At the end of this module, the student will be able to:

- Describe Node based work flow
- Explain the basic features of Nuke Window
- List the tools and functions of the tools available in the Nuke Toolbar
- Explain how to select and edit key frames in the Dope Sheet
- Describe how to work with the curve editor
- Explain the functions of the Viewer node
- Describe how to use the Search and Replace function
- Explain how to undo or redo an action in Nuke
- Describe the steps involved in customizing the interface
- Describe how to work with nodes
- Explain how to add a node to a Node Tree
- Describe how to clone and decline nodes
- Explain how to select and edit nodes
- Describe how to deselect and delete a node
- Identify the different indicators on a node
- Explain how to search for different nodes
- Describe how to view node information
- Explain the steps involved in customizing the nodes display
- Describe how to add notes to the Node Graph

SESSION COVERAGE:

UNIT I: Introduction to Nuke

- Understanding the Workflow
- The Nuke Window
- Using the toolbar
- Using the Menu Bar
- Properties panels
- Animating Parameters

UNIT II: Working with Curve Editor

- Using the curve Editor
- Viewers
- Using the File Browser
- Filename Search and Replace
- Undoing and Redoing
- Customizing the interface

UNIT III: Adding, Deleting, and Editing Nodes

- Adding Nodes
- Selecting Nodes
- Renaming Nodes
- Editing Nodes
- Cloning Nodes
- Disabling & Deleting Nodes

UNIT IV: Working with Nodes in the Node Graph

- Connecting Nodes
- Indicators on Nodes
- Searching for Nodes
- Viewing information on Nodes
- Customising the Nodes Display
- Grouping Nodes in Node graph
- Adding Notes to the Node graph

UNIT V: Reformatting and Merging Images in Nuke

- Reformatting Images
- Adjusting the Bounding box
- Merge Operation
- Generating Contact Sheet
- Copying a Rectangle from one Image to another

UNIT VI: Rendering Images in Nuke

- Transforming in 2D
- Transforming in 2.5D
- Previewing output
- Rendering output

SEMESTER – VI

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF602	Color Correction – Green / Blue screen	3	1	2	6

PURPOSE:

- Enhancing the visualizing skills of students by exposing them to the Chroma removal Techniques and its Requirements.

OBJECTIVES:

- To familiarize students with the concepts of Compositing.
- To enable students to experiment with forms, mapping, rendering and presentation techniques.

COLOUR CORRECTION – GREEN / BLUE SCREEN

At the end of this module, the student will be able to:

- Use the blue/screenkeyer Primatte in Nuke and describes the operation of the Primattenode in Nuke and remove spills.
- Use keyer tool Key light in Nuke.
- Use the basic keying method in key light
- Use to connect images and mattes that you need to key your footage with ultimate.

SESSION COVERAGE:

UNIT I:Keyer

- KeyerNode
- Output
- Operation
- Range
- Keying

UNIT II: Primatte Keyer – I

- Primattenode
- Initialize Section
- Primatte Viewer stool
- Action Section

UNIT III: Primatte Keyer - II

- Adjust Highlights
- Hybrid Matte
- Fine-tuning
- Spill process Section
- Output Section

UNIT IV: Key light - I

- Key light Node
- Screen Matte
- View
- Screen Color
- Clip Black and white

UNIT V:Key light - II

- Screen Gain
- Screen Balance
- Tuning
- Mattes
- Inside and Outside mask
- Color Replacement

UNIT VI: Ultimate

- Ultimate Node
- Sampling
- Screen Correct
- Matte
- Spill Control
- Shadows and Noise
- Color and Film Controls

UNIT VII: Hue Saturation and Applying Grains

- HSV
- Hue
- Saturation
- Synthetic grain
- Practical Grain

UNIT VIII: Channel values

- Clamping
- Offsetting
- Inverting
- Multiplying
- Expressions

UNIT IX: Color Space

- Cineon conversion
- Color space Using match Grade-Nuke -X

SEMESTER – VI

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF603	Match moving - Camera Tracking & Rotomation Techniques	3	1	2	6

PURPOSE:

- To understand the use of Tracking and matching camera with virtual camera in a 3D Space and Live Shot.

OBJECTIVES:

- To get a complete overview of various kinds of Match moving and Camera Tracking Techniques Used in VFX industry.

MATCH MOVING - CAMERA TRACKING – NUKE/3D EQUALIZER/BOUJOU

At the end of this module, the student will be able to:

- Connect a Tracker node to the image you want to track.
- Choose the tracking operation you want to perform: stabilise or match move.
- Place tracking anchors over features in the image.
- Calculate the tracking data.
- To create a planar Tracker Node and connect your footage to the BG input of the Roto node.
- Drawing roto shape in roto and linking up with Planar Tracker.
- Reusing tracked plane to analyse a larger plane situated on the same plane.
- Reusing your tracked points to verify that the overall results are sticking to your footage.
- Detecting jitter around the planar surface corners and smooths it out.
- Set Tracking features and adjust tracking process.
- Placing an image on a tracked planar surface.
- Connecting the Camera Tracker node to the sequence you want to track.
- Masking out Regions of the image
- Adjusting the camera parameters
- Accounting Lens Distortion
- Tracking features in a sequence
- track and solve cameras from reference stills
- Solving Camera position
- Viewing Tracks and Track Information, deleting tracks and refining the solve
- Troubleshoot the solve
- Transforming the scene manually
- Setting points on ground origin using Point Cloud
- Visualising depth in a 3d surface using cards
- Adjusting solver and lens control.

SESSION COVERAGE:

UNIT I: Tracker Node

- Tracker Node
- Viewer Tools
- Positioning Anchors
- Automatic and Key frame Tracking
- Applying Track data

UNIT II: Planar Tracker

- Planar Tracker Node
- Planar tracking
- Altering Tracking Results
- Adding Image to planar surface

UNIT III: Camera Tracking

- Camera Tracker Node
- Masking
- Multi View Scripts
- Sequence Tracking

UNIT IV: Still Mode

- Camera Tracker Node
- Masking
- Multi View Scripts Sequence Tracking

UNIT V: User Tracks

- Adding User Tracks
- Tracking methods
- Tracking Assists
- Manual Tracking
- Assigning 3D survey points

UNIT VI: Solving camera

- Viewing Solving Data
- Troubleshooting

UNIT VII: Solve data and Axis

- Ground plane and axis
- Manual ling Transforming scene
- Camera nodes
- Creating Scenes
- Point clouds
- Cards
- Placing Objects

UNIT VIII: Lens Distortion

- Distorting
- Undistorting
- Matching CG Elements
- Lens Model

SEMESTER – VI

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF604	Rotoscopy & Wire Removal	3	1	2	6

PURPOSE:

- Impart knowledge to students about the methodology of executing a project based on Clean Up and rotoscoping.

OBJECTIVES:

- To expose students to the prevalent techniques in Rotoscoping and Wire Removal of a project.

ROTOMATION TECHNIQUES - NUKE

At the end of this module, the student will be able to:

- Explain what is Timeline and keyframe animation
- Explain the working of the dope sheet and its importance in creating animations
- Explain the working of the graph editor and its commands
- Create a bouncing ball animation and edit it using the commands available in the graph editor and dope sheet
- Explain the working of a pendulum
- Animate a pendulum using the slow in slow out, arc, and overlapping principles of animation
- Explain the concept of overlapping and delayed actions and its role in creating wave animation
- Explain the importance of weight and balance in bringing out the realism in an animated character
- Create a sack animation and add weight and balance to the object (sack) to make it appear realistic
- Explain the importance of gesture drawings and the role it plays in creating realistic animations
- Explain the line of action and its importance in bringing out the characteristics and attitude of the character
- Identify negative and positive spaces and its significance in animation
- Differentiate between good and bad silhouettes
- Create strong animation poses using gesture drawings
- Explain the fundamentals of pose to pose and straight-ahead animation techniques and its application in creating real-life animations
- Apply pose to pose and straight-ahead animation techniques for animating a Character
- Explain the basic poses of a walk cycle
- Animate the walk of the character based on the basic poses
- Explain the basic poses of a walk cycle
- Animate the walk of the character based on the basic poses
- Use the pose-to-pose approach of animation to create character movements by establishing different poses and moving the character systematically from one pose to the other
- Use the pose to pose and straight-ahead techniques of animation to create character Movements
- Explain the fundamentals of constrains

- Create a basic prop animation using constrains
- Explain the importance of listening, thinking, and analysing a scene while creating a believable animation
- Animate a character using lip synchronization and expressions
- Animate a character with motion path
- Generate motion paths by animating objects using motion path keys

SESSION COVERAGE:

UNIT I: Introduction to Timeline and Keyframe Animation

- Animation Interface - Overview
- Animation Preferences
- Understanding Key Frame Animation

UNIT II: Bouncing ball (Working with Dope Sheet and Curve Editor)

- Introduction to Dope Sheet
- Understanding the Graph Editor
- Tangents
- Bouncing Ball Assignment
- Gravity

UNIT III: Pendulum Exercise

- Pendulum Animation Fundamentals
- Arc of Motion
- Animating the Pendulum
- Secondary Action (Drag)

UNIT IV: Wave Exercise

- An Introduction to Wave Animation
- Example of Wave Animation
- Assignment - Wave Animation

UNIT V: Working with Weights - Sack Exercise

- Explain Basics of Weight
- Adding Emotions
- Flour Sack - Jumping Actions

UNIT VI: Creating Strong Poses

- Gesture Drawings - An Introduction
- Line of Action
- Negative Space Versus Positive Space
- Silhouettes
- Creating a Pose Using the Line of Action

UNIT VII: Straight Ahead and Pose to Pose Animation

- Fundamentals of Straight Ahead and Pose to Pose
- Understanding the Pros and Cons
- Applying Straight Ahead and Pose to Pose

UNIT VIII: Walk Cycle I: Lower Body

- Basic Poses of the Walk Cycle
- Animating the Leg
- Fine Tuning in the Graph Editor

UNIT IX: Walk Cycle II: Upper Body

- Basic Poses of the Walk Cycle
- Creating the Upper Body Animation
- Fine Tuning the Animation

UNIT X: Understanding Weights: Push

- Analysing the Reference
- Select the Main Pose
- Observing the Movement
- Animating the Character Based on the Selected Keys

UNIT XI: Understanding Weights: Pull

- Analysing the Reference
- Selecting the Main Pose
- Analysing the Line of Action
- Creating Key Poses and Constrains

UNIT XII: Animation using Props and Constrains

- Constrains - Introduction
- Creating Basic Prop Animation Using Constrains

UNIT XIII: Introduction to Facial Animation

- Analysing the Audio File
- Emphasizing the Main Words
- Checking Facial Controls
- Phonemes Chart
- Animating the Lips - Narrow and Stretch
- Animating the Eyebrows

UNIT XIV: Motion Path

- Defining the Layout and Path
- Creating the CV Curve
- Analysing the Snake Rig
- Attaching the Snake with the Motion Path
- Animating the U Value
- Animating the Camera

ROTSCOPE - SILHOUETTE

At the end of this module, the student will be able to:

- Describe Rotoscoping
- Identify the User Interface of Silhouette
- Perform the steps to create a project
- Perform the steps to create a session
- Recognize and work with various shapes and keyframes
- State the workflow in VFX industry
- List various competencies needed for a Rotoscoping Artist
- Combine multiple shapes and layers in Silhouette FX
- Work with Power Matte Node
- Apply Inverse Kinematics concepts to rotoscopy a complex object
- State the uses of Motion Tracking
- Classify the Tracers
- Perform Point Tracking
- Perform the steps for exporting and Importing the tracked details
- Explain the need for Planar Tracking
- Recognize various types of tracking
- State the workflow of Planar Tracking
- Perform Planar Tracking
- Perform Mocha Tracking
- List the best practices for Planar Tracking
- Recognize the need for capturing Motion Blur while Rotoscoping
- Recognize the different Scene Improvement Techniques
- Perform Rotoscoping of images with Occlusion and Spinning issues
- Perform Paint Operations
- List the features of keying
- List the types of keying
- Perform Keying
- Differentiate between Primary and Secondary Matter
- Perform Rendering the Output in Silhouette FX
- Apply fill and outlines to objects

SESSION COVERAGE:

UNIT I: Rotoscoping Fundamentals

- Rotoscoping
- SilhouetteFX
- User Interface
- Pull Down Menus
- Roto Tools
- Time bar/VTR Controls
- Viewer
- Node List
- Parameters
- Object List
- Timeline
- Creating New Projects
- Creating New Sessions
- Import
- Working with Shapes/Layers/Points

UNIT II: VFX Workflow and Matte Generation

- Workflow in VFX Industry
- Core Competencies
- More on Shapes and Layers
- Power Matte Node
- Power Matte Parameters
- IK (Inverse Kinematics)

UNIT III: Motion Tracking

- Fundamentals of Motion Tracking
- Types of Trackers
- Point Tracker
- Tracker Pop-Up Menu
- Applying Trackers
- Exporting Tracking Data
- Importing Tracking Data

UNIT IV: Planar Tracking

- Planar Tracking
- Need for Planar Tracker
- Planar Tracker
- Components and Attributes of Planar Tracker
- Mocha Tracker
- Components and Attributes of Planar Tracker
- Workflow for Planar and Mocha Tracker
- Other Panels
- Tracker Preferences
- Best Practices for Planar Tracking

UNIT V: Additional Concepts in SilhouetteFX

- Motion Blur
- Shot Stabilization
- Occlusion and Stabilization
- Scene Improvement Techniques
- Paint Node

UNIT VI: Additional Concepts in Silhouette FX

- Features of Keying
- Types of Keying
- Keyer Node
- Deartifact
- Primary Matte
- Secondary Matte
- Rendering

SEMESTER – VI

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF605	Compositing with Passes & Working with Projection Mapping	1	0	1	2

PURPOSE:

- Understanding the fundamentals of the theoretical aspects of studying Compositing Using various Passes and Projection Mapping to its objectives and its essential methodologies.

OBJECTIVES:

- To understand research terminology.
- To understand quantitative, qualitative and mixed method approaches to research.

COMPOSITING WITH PASSES

At the end of this module, the student will be able to:

- Explain the workflow of Channels
- Explain the difference between Channels and Layers
- Create Channels and Layers
- Explain how to use the Link menu to link channels
- Explain the flow of channels throughout a script
- Describe the procedures to rename, remove, and swap Channels
- Explain the use of different channel nodes
- Describe the procedure of using Nuke's unique Layer and Channel system
- Differentiate between Render Pass and Render Channel
- Describe the procedure of working with Multi-channel EXRs
- Describe the procedure of creating new channels inside Nuke

SESSION COVERAGE:

UNIT I: Channels and Layers

- Channels
- Channels and Layers
- Creating Channels and Layers
- Selecting Channels

UNIT II: Working with Channels

- Link Channels
- Channels
- Tracing Channels
- Renaming Channels
- Removing Channels and Layers
- Swapping Channels

UNIT III: Channel Nodes

- Channels Nodes

UNIT IV: Nuke Layers and Channels

- Nuke's Layers and Channels system

UNIT V: Multi-pass Rendering

- Difference between Render Pass and Render Channel
- Working with Multi-channel EXRs
- Conclusion

UNIT VI: Creating Channels in Nuke

- Creating New Channels

WORKING WITH PROJECTION MAPPING

- Understand the fundamentals of Projection Mapping
- Understand and compare the techniques of projection mapping
- Explore the software available for projection mapping. Learn to work with VPT 7 (a popular projection mapping software)
- Understand the steps and methods involved in preparing the content for projection mapping
- Understand the production process and projection mapping for 3Dcontent
- Understand the areas and forms in which projecting mapping can be used as a medium

SESSION COVERAGE:

UNIT I: Introduction to Projection Mapping

- Definition and Concept
- History and Background

UNIT II: Principles and Techniques of Projection Mapping

- Setup and Logistics
- Techniques of Projection Mapping

UNIT III: Software for Projection Mapping

- Most Popular Projection Mapping Software for Mac
- Most Popular Projection Mapping Software for PC
- Commonly Used Software
- VPT 7 (Video Projection Tool)

UNIT IV: Content Creation for Projection Mapping

- Preparing the Script
- Story Boarding
- Development of Content using 3DS Max and Maya
- Final Composition of Content
- Importing the content in projection mapping software

UNIT V: 3D Projection Mapping

- Preparing the Script
- Story Boarding
- Development of Content using 3DS Max and Maya
- Final Composition of Content
- Importing the content in projection mapping software

UNIT VI: Application of Projection Mapping

- Preparing the Script
- Story Boarding
- Development of Content using 3DS Max and Maya
- Final Composition of Content
- Importing the content in projection mapping software

SEMESTER – VI

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF606	Project: Creating a VFX Shot \ Creating a VFX based AD	0	2	6	8

PURPOSE:

- Exposing students to the various problems and issues encountered in the practice VFX Shot and Its Technical production requirements.

PROJECT: CREATING A 3D ANIMATED SHOT / CREATING A SHOT OF DESTRUCTION WITH FX

At the end of this module, students will be able to:

- List the profiles of a VFX team
- State the different animation for multiple stages.
- Recognize client requirements
- Estimate the project budget
- Create script and storyboard
- Plan and schedule project
- Define the production stage
- Create a VFX project
- Composite the VFX project

SEMESTER – VII

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF701	Game Idea- Visualization & Story Telling	2	0	2	4

At the end of this module, the student will be able to:

- Describe Designer’s Story Versus Player’s Story
- Describe Places for Storytelling
- Describe Linear Writing Pitfalls
- Describe Game Stories

SESSION COVERAGE:

UNIT I: Brainstorming a Game Idea: Game play, Technology, and story

- Starting Points
- Working with Limitations
- Embrace your limitations
- If you choose not to decide, you still have made a choice

UNIT II: Storytelling

- Designer’s Story Versus Player’s Story
- Places for Storytelling
- Linear Writing Pitfalls
- Game Stories
- The Dream

SEMESTER – VII

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF702	Overview of AR & VR	2	2	2	6

PURPOSE:

- Familiarizing students about the Software Application of Augmented reality and Virtual reality.

-

OBJECTIVES:

- To enable students to understand the various types of Techniques and knowledge required in a project.

ASSIGNMENTS:

- Creating a 3D Game Asset,
- Creating a Game Environment
- Creating a Short Animation using Blender.

JOB PROFILES APPLICABLE:

- Pre-Viz Artist
- Game Asset Designer
- 3D Game Environment Artist
- 3D Game Develop.

REFERENCE BOOKS:

- Augmented Reality - Theory, Design and Development by Chetankumar G Shetty (Author).
- Computer Graphics with Virtual Reality System by Rajesh K. Maurya (Author).
- Drawing Basics and Video Game Art: Classic to Cutting-Edge Art Techniques for Winning Video Game Design by Chris Solarski (Author).

- Making Great Games: An Insider's Guide to Designing and Developing the World's Greatest Video Games by Michael Thornton Wyman (Author).
- Building a Game with Unity and Blender: by Lee ZhiEng (Author)
- 3D Game Design with Unreal Engine 4 and Blender by Justin Plowman (Author)

OVERVIEW OF AUGMENTED REALITY AND VIRTUAL REALITY

At the end of this module, the student will be able to:

- Define augmentation reality
- Differentiate between augmentation reality and virtual reality
- Describe the applications of 3DAR
- Familiarize yourself with the hardware and software used to design 3D in Augmented Reality
- Explain interaction
- Describe perception of depth
- Explain the addition of texture to 3Dobject
- Describe Image Recognition and Camera Calibration
- Explain Tracking Types
- Explain 3D Graphics Rendering
- Explain Interaction in AR
- Explain Point of Interest Controller
- Explain Sensor Controller
- Explain Accessing Sensors
- Explain AREA Approach
- Explain Marker Tracking
- Explain Marker less Tracking
- Explain Marker less 3DTracking
- Explain Models
- Explain the process of Texturing Models
- Explain creating Markers
- Explain Manipulation of components
- Explain Loading Models onto Markers
- Explain Interaction of 3D object in AR Environment

SESSION COVERAGE:

UNIT I: Introduction to 3D Augmented Reality

- What is Augmented Reality?
- What is 3D Augmented Reality?
- Difference Between 3D Virtual Reality and Augmented Reality
- 3D Augmented Reality as User Interface Concept
- 3D Registration with the Real-world
- Applications of 3D Augmented Reality

UNIT II: Designing 3D in Augmented Reality

- Hardware
- Software
- Interaction
- Perception of Depth
- Adding Texture to 3D Object for Proper Augmented Reality

UNIT III: 3D Rendering and Interaction in Augmented Reality

- Image Recognition
- Camera Calibration
- Tracking
- 3D Graphics Rendering
- Interaction in Augmented Reality

UNIT IV: Location-based Augmented Reality

- Point of Interest Controller
- Sensor Controller
- Accessing Sensors
- AREA Approach

UNIT V: Vision Recognition Based Virtual Reality

- Marker Tracking
- Marker less Tracking
- Marker less 3DTracking

UNIT VI: Creation of 3D Objects in Virtual Reality Environment

- Modeling
- Texturing
- Creating Markers
- Manipulation
- Model Loading in Markers
- Interaction of 3D Objects and Moving Rotating Scaling Models in Augmented Reality Environment

SEMESTER – VII

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF703	Modeling, Texturing, & Lighting for Games	3	0	2	5

Objective:

At the end of this module, the student will be able to:

- Describe game modeling
- Explain polygonal modeling
- Describe UV layout
- Describe texturing and multitexture
- Describe shaders
- Describe game lighting

SESSION COVERAGE:

UNIT I: Game Modeling

- Model after Reference Polygonal Objects Polygon Limits
- Low-Polygon Modeling Subdivided Technique Characteristic Technique Optimizing Objects
- Edge Rotation Smoothing Groups Cleanup and Exporting
- In Production

UNIT II: In Production: Model/UV

- Low-Polygon Modeling

UNIT III: Polygonal Modeling

- Game Art Limitations
- Game Modeling Common Tools and Commands Game Modeling Pointers
- Polygonal Modeling - Tutorial: Creating the Weapon

UNIT IV: Modeling the Character (Lab)

- Modeling the Character

UNIT V: UV Layout

- Planning UV Layout

UNIT VI: Texture Creation

- Modeling the Character Color Channels ((RGB) Alpha Channel
- Sky and Environment Map Tiling Textures
- Detail Map
- Practical Photoshop Tricks in Production

UNIT VII: Texture Technologies

- Colors Raw Image
- Targa (TGA)
- Direct Draw Surface (DDS)
- High Dynamic Range Image (HDRI) Volume (3D) Textures
- Texture Resolution for Games Texel's versus Pixels
- Mip mapping

UNIT VIII: In Production: Multi texture

- Multiple Textures Multiple UVs
- Setting Up Multi texture Blend in 3D In Production
- Adoption Color Map
- Normal Map Color Information Tangent Space
- Object (World) Space Normal Maps in 3DViewport
- High-Resolution Mesh Calibration in Production
- Parallel Displacement Mapping

UNIT IX: Shaders

- Vertex Shaders Pixel Shaders
- Shaders for Programmers Shaders for Artists
- In Production

UNIT X: Texturing

- Texturing in the Gaming World Mapping UVs
- UV Projection Commands the UV Texture Editor
- Texture Resolutions and Formats
- Alpha Channel and Pixel Shader Effects

UNIT XI: Working with UV Texture (Lab)

- Working with UV Texture

UNIT XII: Creating Backgrounds (Lab)

- Creating Backgrounds

UNIT XIII: Creating a House (Lab)

- Creating a House

UNIT XIV: Creating Trees (Lab)

- Creating Trees

UNIT XV: Create Foliage and Rocks (Lab)

- Create Foliage and Rocks

UNIT XVI: Creating the Steps and Sacred Gate (Lab)

- Creating the Steps and Sacred Gate

UNIT XVII: Create the Main Shrine (Lab)

- Create the Main Shrine

UNIT XVIII: Creating a River (Lab)

- Creating a River

UNIT XIX: Create Sky and Distant background (Lab)

- Create Sky and Distant Background

UNIT XX: Applying Vertex Color

- Applying Vertex Color

UNIT XXI: Game Lighting

- Per-vertex Lighting Vertex Controlling Vertex Soft/Hard Edges Per-Pixel Lighting Dynamic Lighting
- Game Shadows

SEMESTER – VII

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF704	Introduction to Unreal / Unity Game Engine and Workflow	3	0	0	3

Objective:

At the end of this module, the student will be able to:

- Explain Unity Game Engine and its features
- Explore all the tools of Unity, their interfaces, and uses

SESSION COVERAGE:

UNIT I: Downloading and Installing Unreal

- Game engine overview
- Unreal —past, present, and future
- The case for Unreal
- System requirements
- Downloading Unreal
- Installing Unreal

UNIT II: The Unreal Interface

- Screen Real Estate
- Menu
- Scene view
- Game view
- Project window
- Hierarchy window
- Inspector window
- Toolbar
- Layouts

UNREAL/UNITY GAME ENGINE WORKFLOW

At the end of this module, the student will be able to:

- Explain how to make the game environment more robust.
- Explain how to add trees and other objects to the game scene.
- Understand the steps necessary to create 3D objects using Unreal native modelling tools.
- Understand of how to incorporate the game's player character—the Cucumber Man, importing the character, and the review of controls and animations.
- Understand the non-player characters—the Cucumber Beetles, their animations are examined and changes are made to the non-player character's animation controller.
- Understand the design and development of a Heads-Up Display (HUD) in the game.
- Explain how to incorporate a Heads-Up Display (HUD) in the game.
- Understand & Review the design, scripting, and implementation of the game's point system

SESSION COVERAGE:

UNIT I: Creating and Importing 3D Objects for Our Game

- Understanding assets and Game Objects
- Creating 3D objects in Unreal
- Using the Unreal Asset Store
- Incorporating custom assets in our game
- Working with imported assets

UNIT II: Implementing Our Player Character

- Working with Unreal standard asset package
- Importing the game character
- Configuring the player controller
- Fine-tuning our character
- Animating our player character
- Terraforming the terrain for our Cucumber Man

UNIT III: Implementing Our Non-Player Characters

- Understanding the non-player characters
- Importing the non-player characters into our game
- Animating our non-player characters
- Incorporating the non-player characters into our game
- Terraforming the terrain for our Cucumber Beetles
- Adding cucumber patches to our terrain
- Adding cucumbers to our terrain
- Scripting our non-player characters

UNIT IV: Adding a Heads-Up Display

- Designing our HUD
- Working with a canvas
- Creating a mini-map
- Scripting for dynamic content

UNIT V: Scripting Our Points System

- Collecting cherries from trees
- Adding the cherry-throwing capability
- Adding points based on cherry collection and combat hits

UNIT VI: Scripting Victory and Defeat

- Designing the defeat and victory conditions
- Updating the player's health
- Implementing the victory logic
- Implementing the end-of-game logic
- Updating the HUD with lives remaining
- Scripting the player character's respawning

SEMESTER – VII

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF705	Working with Unreal Library & Kit	3	0	1	4

Purpose:

Unreal Development Kit is the free edition of Unreal Engine and gives library features for Testing and Compiling a Game.

SESSION COVERAGE:

UNIT I: Using In-game Analytics to track player Engagement and balance.

UNIT II: Overview of the Automation used for Unit Testing and features testing.

UNIT III: Developer Tools – Description of Tool Options available in the Developer Tools Menu.

UNIT IV: Performance and Profiling

UNIT V: Proxy geometry Tool

UNIT VI: Replay system

UNIT VII: Using the UDK for Testing

UNIT VIII: Exploring the Categories (Fluctuating Numbers as per Updates)

UNIT IX: Troubleshooting and Testing the UDK elements.

UNIT X: Testing a Demo Game Play

SEMESTER – VII

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF706	Project: Compiling a Mobile Based Game	2	2	7	11

PURPOSE:

- Exposing students to the Basic process of Game development.

OBJECTIVES:

- To understand the need and application of game Idea and its Content.
- To provide exposure to students on various Stages, Details of Colors and layout and Game Content.

PROJECT: CREATING A 3D ANIMATED SHOT / CREATING A SHOT OF DESTRUCTION WITH FX

At the end of this module, students will be able to:

- List the profiles of a 3D/2D animation team
- State the different animation for multiple stages.
- Recognize client requirements
- Estimate the project budget
- Create script and storyboard
- Plan and schedule project
- Define the production stage
- Create a Mobile Game project
- Compose the Mobile Game project
- Publish the Mobile Game project

SEMESTER – VIII

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF801	Professional Practice	6	0	2	8

PURPOSE:

- Equipping students with the knowledge and skills needed to run a professionally managed office, such as current practices and codes of conduct required to enhance skills and techniques of managing small- and large-scale projects.

OBJECTIVES:

- To understand the hierarchy and responsibilities of members that makes up a design team.
- To be familiar with the legalities applicable to the profession.
- To understand how projects are managed.
- To understand the entire process of tendering.
- To understand the entire process of contracting.

ASSIGNMENTS:

- Creating your Resume/CV
- Creating your Final Showreel

REFERENCE BOOKS:

- Resume: Writing 2020 The Ultimate Guide to Writing a Resume that Lands YOU the Job! by Charles W Hanson (Author)
- Personality Development and Soft Skills: Preparing for Tomorrow by Shikha Kapoor (Author)
- Get Your Dream Job: A Step-by -step Guide to Clear Any Interview with Confidence by Piyush Bhatia (Author)

CREATING AN EFFECTIVE CV OR RESUME

Whether you are applying for a summer job to gain professional experience, graduate school to further your education, or a permanent position in management, research, or academia, you will need to submit as part of your application package either a resume or curriculum vitae (CV). These documents serve as important marketing tools that will give a self-portrait or advertisement of you and will present your relative strengths, skills, and experiences to a potential employer. An effective resume or CV will provide an employer with an overview of who you are as a student or young professional, what you know and can do in relation to the position of interest, and what relevant skills, traits, and accomplishments you have achieved at this point in your education or career. Therefore, the objective of your resume or CV is to catch the eye of a prospective employer and secure an interview. Because employers may have to sift through dozens of these documents for a particular position, it is important that your resume or CV makes a strong first impression. As a result, these documents must be visually appealing, well organized, error-free, and written in a highly literate fashion. It is also important to update your resume or CV frequently in order to accurately reflect your most recent and relevant experiences and accomplishments.

SESSION COVERAGE:

UNIT I: Getting Started on Your Resume or Curriculum Vitae

UNIT II: Appearance of Your Resume or Curriculum Vitae.

UNIT III: Categories and Content for a Resume or Curriculum Vitae

UNIT IV: Make a List of Your Work Experience

UNIT V: Focus on Your Achievements

UNIT VI: What to Leave off Your Resume

UNIT VII: Concluding Remarks

UNIT VIII: Proofread, Proofread, and Proofread Again

COMMUNICATION AND PERSONALITY DEVELOPMENT

OBJECTIVES:

- To understand the concept, process and importance of communication.
- To gain knowledge of media of communication.
- To develop skills of effective communication both written and oral.
- To help students to acquaint with application of communication skills in Practical industry.
- To understand the concept of personality and personality development and its significance.
- To understand and develop various traits required for personality development.

SESSION COVERAGE:

Introduction to Communication:

Meaning and Definition – Process – Functions – Objectives – Importance – Essentials of Good Communication – Communication Barriers – Overcoming Communication Barriers – Cross Cultural Communication.

UNIT I: Written Communication

- Need and functions of business letters – Planning and layout of business letters – Essentials of effective correspondence – Advantages and limitations of written communication.

UNIT II: Oral Communication

- Meaning, nature and scope – Principles of Effective Oral Communication – Techniques of Effective Speech – The Art of Listening – Principles of Good Listening – Advantages and
 - **Limitations of Oral Communication.**
(Principles and good practices in online communication e.g., Telephonic, Internet – VOIP (Voice over Internet Protocol.)
 - **Personality Development**
The concept of personality – Dimensions of personality – Term personality development– Significance.
 - **Attitude and Motivation**
Attitude – Concept – Significance – Factors affecting attitudes – Positive attitude – Advantages – Negative attitude – Disadvantages – Ways to develop positive attitude – Difference between Personalities having Positive and Negative Attitude – Concept of motivation – Significance – Internal and external motives – Importance of self-motivation –Factors leading to demotivation.
 - **Self-Esteem**
Term self-esteem – Symptoms – Advantages – Do's and Don'ts to develop positive self-esteem – Low self-esteem – Symptoms – Personality having low self-esteem – Positive and negative self-esteem.
 - **Interpersonal Relationships.**
Interpersonal relationships – Teaming – Developing positive personality – Analysis of strengths and weaknesses.
 - **Goal-Setting**
Concept of goal-setting – Importance of goals – Dream Vs goal – Why goal-setting fails - SMART (Specific, Measurable, Achievable, Realistic, Time-bound) goals – Art of Prioritisation – Do's and Don'ts about goals.
 - **Essential soft skills**
Assertiveness - Lateral thinking - Work ethics – Good manners and etiquettes Concept, significance and skills to achieve should be studied.)

TOPICS PRESCRIBED FOR WORKSHOP / SKILL LAB:

- Group discussion
- Presentation skills
- Problem-solving
- Decision-making
- Creativity
- Innovation
- Team Work

TAKING MOCK INTERVIEWS AND PREPARING FOR JOB INTERVIEWS.

Do you have a job interview on your schedule? There are a number of steps you can take before (and after) the interview to ensure that you make a terrific impression on your potential employer.

SESSION COVERAGE:

UNIT I: The Best Ways to Prepare for an Interview.

UNIT II: Analyze the Job Requirements.

UNIT III: Match them to the job requirements.

UNIT IV: Research the Company.

UNIT V: Practice Interviewing.

UNIT VI: Get Your Interview Clothes Ready.

UNIT VII: Decide What to Do with Your Hair.

UNIT VIII: What to Bring to a Job Interview?

UNIT IX: Practice Interview Etiquette.

UNIT X: Get Directions.

UNIT XI: Listen and Ask Questions.

UNIT XII: Follow Up with a Thank You Note.

SEMESTER – VIII

Code	Subject	Hours / Week			
		Lecture	Field	Studio	Total
AF802	Project: Portfolio and showreel Development	4	1	20	25

PURPOSE:

- Presenting comprehensively, the knowledge and skills gained, for evaluation.

OBJECTIVES:

- To showcase the knowledge gained during the course of study, the skills acquired and the understanding achieved to resolve design issues pertaining to 3D Animation/VFX.

PORTFOLIO AND SHOWREEL DEVELOPMENT

At the end of this module, the student will be able to:

- Pick a topic of Specialization.
- Understanding the break Down Approach
- Viewing Some Effective Showreels and Portfolio.
- Dos and Don'ts in a Portfolio
- Creating a Deadline and Structure of Execution.
- Giving Finishing Touches to Portfolio.
- Reviewing and Assessment of Portfolio from Experts.

INTERNSHIP GUIDELINES

The Goal of student internship program is to supplement mission of furthering the professional growth of those engaged in procurement and Media and Entertainment based job Profiles and related professions.

- Internship Guidelines would be as per the Norms and Conditions shared by Internship Offering Companies and Studios.

CAMPUS PREPARATION

This would Help Students in getting Job Ready and Get Opportunities on Time

SESSION COVERAGE:

Here is the most common procedure for campus placement.

UNIT I: Pre-Placement Presentation

UNIT II: Qualifications

UNIT III: Written Examination

UNIT IV: Group Discussion

UNIT V: Technical Knowledge Interview.

UNIT VI: Formal Interview

UNIT VII: Post Placement Discussion