

SPECIALIZATION PROGRAM IN
BACHELORS OF DESIGN /
BACHELORS OF VISUAL ARTS
ANIMATION AND GAME ART

Revised Course Matrix & Syllabus applicable from 2019 onwards
BANGALORE CENTRAL UNIVERSITY

ANIMATION AND GAME ART

2nd YEAR | SEMESTER III

Sl. No.	Subject Code	Subject Title	Instruction Hrs./ week	Marks			Credit
				IA	Exam	Total	
Part 1	University code	Language I	3	30	70	100	2
	University code	Language II	3	30	70	100	2
Part 2		CORE STUDIO COURSE					
	AN 31	Animation Design Thinking	4	30	70	100	2
	AN 32	Art for Animation-I	6	30	70	100	2
	AN 33	Animation Foundation	6	30	70	100	2
	AN 34	Computer Graphics Fundamentals	4	30	70	100	2
	EL35.1/2/3	(Elective) 35.1 Digital Design-I 35.2 Graphics Design-I 35.3 Revitalization of Arts & Crafts	4	15	35	50	1
Part 3	University code	Non-Core Theory Science and Society	2	30	70	100	2
	CC-EC	Workshop	2	50	-	50	1
Total Marks and Credits						800	16

BVA /B.Des - ANIMATION AND GAME ART

2nd YEAR | SEMESTER IV

Sl. No.	Subject Code	Course Title	Instruc tion Hrs./ week	Duratio n of Exam (Hrs.)	Marks			Credit
					IA	Exam	Total	
Part 1 Langu ages	University code	Language - I: Kannada/Sanskrit/Urdu/Tamil/ Telugu/Malayalam/Additional English / Marathi/ Hindi	3	3	30	70	100	2
	University code	Language – II : English	3	3	30	70	100	2
		CORE STUDIO COURSE						
Part 2 Option al	AN41	Art for Animation II	4	--	30	70	100	2
	AN 42	2D-3D Digital Animation	6	--	30	70	100	2
	AN 43	3D CGI Foundation	6	--	30	70	100	2
	AN 44	Concept Art & Visual Development	5	--	30	70	100	2
	EL 45.1 45.2 45.3	(Elective) 45.1 Digital Design-II 45.2 Graphics Design-II 45.3 Digital Animation	3	--	15	35	50	1
Part 3	CC-EC	WORKSHOP	2	--	50	--	50	1
	University code	<i>None Core</i>	2	3	30	70	100	2
Total Marks and Credits 800								16

BVA /B.Des - ANIMATION AND GAME ART

3rd YEAR | SEMESTER V

	Subject Code	Course Title	Instruction Hrs/ week	Duration of Exam (hrs)	Marks			Credits
					IA	Exam	Total	
		CORE THEORY						
Part 2	AN51	Story Design & Visual Narrative (Theory)	2	3	30	70	100	2
		CORE STUDIO COURSE						
	AN52	Preproduction; Script to Animatic (Practical)	4	--	30	70	100	2
	AN53	Character Animation(Practical)	8	--	90	210	300	6
	AN54	BG Design and Development (Practical)	8	--	90	210	300	6
	EL 55.1 55.2 55.3	Elective - (Practical) 55.1 Digital Matte painting 55.2 Camera and Film editing 55.3 Photography	4	--	30	70	100	2
	AN56	Virtual Cinematography(Practical)	4	--	30	70	100	2
Part 3		SDC Banking and Finance	2	3	30	70	100	2
Total Marks and Credits							1000	20

BVA / B.Des -ANIMATION AND GAMER ART

3rd YEAR | SEMESTER VI

Sl. No.	Subject Code	Course Title	Instructi on Hrs/ week	Duration of Exam (hrs)	Marks			Credit	
					IA	Exam	Total		
		Core Practical							
	AN61	Game Design	3	3	30	70	100	2	
	AN62	3D Character Setup	6	--	60	140	200	4	
Part -2	AN63	Effects Animation	3	--	30	70	100	2	
	AN64	Character Design and Development	8	--	60	140	200	4	
	EL 65.1 65.2 65.3	(Elective) 65.1 Interaction Design 65.2 Motion Graphics 65.3 Digital Illustration Technique	4	--	30	70	100	2	
	AN66	Postproduction	4	--	60	140	200	4	
	Part -3		SDC / Entrepreneurship and Innovation	2	3	30	70	100	2
			Total Marks and Credits					1000	20

BVA / B.Des - ANIMATION AND GAMER ART

4th YEAR | SEMESTER VII

Sl. No.	Subject Code	Course Title	Instruction Hrs/ week	Duration of Exam (hrs)	Marks			Credit
					IA	Exam	Total	
Part 2		Core Theory						
	AN71	Animation Studio Design & management	2		30	70	100	2
		Core Practical						
	AN 72	Portfolio Development	2		30	70	100	2
	ANEL 73.1 73.2 73.3 73.4 73.5	3D Major Elective: 71.1 2D-3D Animation. 71.2 3D CGI for Animation Film 71.3 3D CGI for Game Art 71.4 Visual Effects & Compositing 71.5 Pre-Production	6		90	210	300	6
	AN74	Graduation Project - part 1	10		120	280	400	8
	EL 75.1 75.2 75.3	(Elective) 75.1 Game Design 75.2 Videography 75.3 Preproduction	4		30	70	100	2
	AN76	Design Thesis (Dissertation)	6		90	210	300	6
Total Marks and Credits							1300	26

ANIMATION AND GAMER ART

4th YEAR | SEMESTER VIII

Sl. No.	Subject Code	Course Title	Instruction Hrs/ week	Duration of Exam (hrs)	Marks			Credit
					IA	Exam	Total	
		CORE STUDIO COURSE						
1	AN81	Graduation project-part 2	16	--	210	490	800	16
2	AN82	Internship	--	--	150	350	500	10
		Total Marks and Credits					1300	26

YEAR 2 / SEMESTER 3

Year 2 / SEMESTER 3 / SPECIALIZATION SYLLABUS
Program: BVA / B.Des Animation and Game Art

Course Title: Language I

Course Code: University code

Credit: 2

As per the University syllabus

Year 2 / SEMESTER 3 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: Language II

Course Code: University code

Credit: 2

As per the University syllabus

Year 2 / SEMESTER 3 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: Animation Design Thinking

Course Code: AN31

Credit: 2

Brief description of the Course:

To expose the student with state of the art perspectives, ideas, concepts, and solutions related to the design and execution of innovation driven projects using design thinking principles. To prepare the mindset and discipline of systemic inspiration driven by an educated curiosity aimed find new sources of ideas, new connections and new models specially outside their regular operating atmosphere.

Learning Outcome:

After studying this course, you should be able to:

- Have an awareness of how design thinking can be applied in a wide range of contexts, from the personal to the global
- Investigate and think creatively about design problems and opportunities
- Initiate an attitude of playfulness to aid design thinking
- Develop visual literacy and articulacy to explain design decisions

Pedagogy: Lecture, demonstrations, Studio projects

Course Outline:

- Identify an Opportunity
 - **Choosing the Idea and doing the research on topic**
 - Scope Your Project
 - Draft Your Design Brief
 - Make Your Plans
- Empathize
 - Identify Insights
 - **Interview**
 - **Brainstorming & Discussion**
- Ideate
 - Designing concept
 - Experimenting the mediums
- Prototype
 - Creating prototype in chosen medium
 - Finale editing and compositing
 - Taking feedback

Reference Books:

101 Design Methods: A Structured Approach for Driving Innovation in Your Organization by Vijay Kumar

Human-Centered Design Toolkit: An Open-Source Toolkit To Inspire New Solutions in the Developing World by IDEO

This is Service Design Thinking: Basics, Tools, Cases by Marc Stickdorn and Jakob Schneider

Year 2 / SEMESTER 3 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: Art for Animation-I

Course Code: AN32

Credit: 2

Brief description of the Course:

The aim of the module is to develop the understanding of human body structure and the form of each part of Body through observing and Drawing it.

The aim of the module is also to teach advanced shading of reflections, refractions, transparency and lighting.

Introduce students to tools of digital software for creating Digital art.

Learning Outcome:

- Understanding of Proportion & Structure of human figure
- Understanding to simplify the form of human body parts

- Understanding posing, balance and line of action

The students will receive information that will enable them to:

- Understand the color representation in computers:.
- Understanding of digital software functionality and image and file formats
- Knowledge of tools such as brushes, palettes, paths, selections, masks, transforms, layers, filters etc
- Familiarize with the terminologies and concepts for creating and manipulating digital images.
- Understanding different types of materials and their interaction with light.

Pedagogy: Lecture, demonstrations, Studio projects

Course Outline:

- Drawing for Animation- Still life and figurative illustration using **pencil on paper**
 - Construction and basic geometric shapes and form
 - Proportion and Scale
 - Depth and Perspective
 - Volume & Solid Drawing
 - Curves and Line of action
 - Body Balance and weight shifting
 - Drawing of Life study
 - Center of Mass (COM)
 - Simplification
 - Silhouette
 - Drawing of Still life
 - Architectural building drawing
- Art with digital platform
 - Image Restoration
 - Using the shape tools to create vector art. Also use layers to compose images.
 - Material Study by creating spheres composed of different materials such as metal, plastic, skin, rubber, fabric, etc..
 - Creating Digital art by composing different elements from 5 -6 images and creating one image.

Reference Books:

- *Action Anatomy* by Takashi Iijima
- *Dynamic Figure Drawing* by Burne Hogarth
- *How to Draw the Human Figure: Famous Artists School, Step-by-Step Method* by Cortina Famous Schools Staff

- *Drawing and Anatomy* by Victor Perat

Year 2 / SEMESTER 3 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: Animation Foundation

Course Code: AN33

Credit: 2

Brief description of the Course:

The subject aims to impart knowledge of Animation and its principles as foundation to the course and enables the students to learn and understand the history and evolution of Animation as a medium of communication.

Learning Outcome:

- Understanding of Basic Principles of Animation. Understanding process of cell animation and learning line testing machine.
- How to identify arcs and overlapping actions on humans, creature, and props.
- Performance Acting with the character like interpretation of props.
- Understanding how to anthropomorphize a prop.

Pedagogy: Lecture, demonstrations, Studio projects

Course Outline:

- Module – 1
 - Animation Process / How animation works
 - Understand Timing and spacing
 - Exercise -1: “Animate a geometric shapes moving/Rolling one side to another on the floor”
 - Overview on various Mediums and Techniques
 - Animation showcase
- Module – 2
 - Exercise-2: Tell an short act using Stop Motion (clay / paper Cutout) animation Techniques
- Module – 3
 - Understand Basic Principles of Animation
 - Execute 2-3 exercise to understand Principles.
- Module – 4
 - Understand preproduction, production and postproduction film making process in brief.
 - Student’s Assignment-1: Animate a short act/ concept adding sound effects using any medium like clay, paper cutout, Pixilation, Classical etc....(faculty will help in editing & sound editing)
- Module -5
 - Using Morphing, Blending technique in 2D classical animation, Animate a concept synchronizing with sound effects.
- Module -6
 - Understand Follow through, over lapping action, Flexibility, Exaggeration, Secondary action, etc... Principles

- Understand Mass and Volume attributes
- Student's Assignment: Animating Flour Sack, Ball with Tail. Medium: Hand Drawn key frame animation.

Reference Books:

The Animator's Survival Kit: Richard Williams

The Illusion of Life: Disney Animation, Ollie Johnston and Frank Thomas

Animation Art: From Pencil to Pixel, the world of Cartoon Anime and CGI- Jerry Beck

Year 2 / SEMESTER 3 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art Design

Course Title: Computer Graphics Fundamentals

Course Code: AN34

Credit: 2

Brief description of the Course:

The subject aims to understand the basics of computer graphics imagery. Student will understand several digital art applications, its process, formats and outcomes. They also understand how does color works and interchanges between several digital art platforms like monitor, mobile, laptop, TV, projector etc... Through this subject student will be familiar with most known computer graphics terminology whatever they will use over the full course.

Learning Objectives:

After completing this course students will understand;

- Raster and Vector graphics process and its uses.
- 2D-3D computer graphics applications
- Color Profile, Device Profile and color management Models among different software & hardware devices.
- Why Color distortion happens between several display and printing devices.
- Student will be familiar with most known computer graphics terminology.

Pedagogy: Class room, Lecture Presentation

Course Outline:

- Understand Raster and Vector graphics process.
- Understand 2D & 3D Computer Graphics.
- Understand Digital Art and its several types of applications and common graphics file formats.

- Understand Colors and Color Models in computer graphics. Also understand the Color Management Models.
- Discussion on Display, Scanning & Printing devices and Device Profile.
- Understand applications of Computer Graphics imagery in several sectors like entertainment to Architectural, engineering, medical, law and defense.

Reference Book:

- 1 *The Visual Display of Quantitative Information*, 2nd edition by Edward R. Tufte (Hardcover - May 2001)
- 2 *Envisioning Information* by Edward R. Tufte (Hardcover - May 1990)
- 3 *Visual Explanations: Images and Quantities, Evidence and Narrative* by Edward R. Tufte

Year 2 / SEMESTER 3 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: ELECTIVE

Course Code: EL35

Credit: 1

Brief description of the Course:

A common list of Electives is provided to all the programs of Art and Design. These elective courses focus on the interdisciplinary Subjects and digital skills. Based on the need of the program and interest among the individual students these electives are added. Every Student has to contact their mentor to choose the Electives with the help of Faculty Guide. These electives are partially taught in the class room, and the rest of the classes are focused by the student research and practice.

Year 2 / SEMESTER 3 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: CC & EC - Workshop

Course Code: CC & EC

Credit: 1

Brief description of the Course: Suitable Workshop / Activity / Project will be conducted in this semester
Simple Project :

Here Students will work in small groups and learn how to approach to the simple problems in the system. This project help them to apply the skills learnt in the previous and the present semesters and find out their importance.

YEAR 2 / SEMESTER 4

Year 2 / SEMESTER 4 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation Design

Course Title: Language I

Course Code:University code

Credit: 2

As per the University syllabus

Year 2 / SEMESTER 4 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: Language II

Course Code: University code

Credit: 2

As per the University syllabus

Year 2 / SEMESTER 4/ SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: Art for Animation-II

Course Code:AN41

Credit: 2

Brief description of the Course:

The aim of the module is to develop the understanding of human & animals muscles structure through practically observing and Drawing it. Through gesture drawing students gain an opportunity to further their animation skills by focusing on what's most important in the pose.

The second part of the course teaches selected advanced topics of computer graphics. Understanding vectors by using the pen and other shape tools to create 2D art. Layers need to be used to separate different elements of the images, such as shadows of an object will be on a different layer.

Learning Outcome:

- Understanding Muscle movement in human body
- Understanding of Proportion & Structure of human & animal figure
- Understanding to simplify the form of human & animal body parts
- Understanding Muscle study of human & animal body parts
- Understanding Muscle and its relationship with each other

The students will receive information that will enable them to:

- Understand the design principles used in creation of digital art.
- Understanding of digital software functionality and capability as a graphic editing program
- Knowledge of tools such as brushes, palettes, paths, selections, masks, transforms, layers, filters etc
- Familiarize with the terminologies and concepts for creating and manipulating digital images.
- Understanding different types of materials and their interaction with light.

Pedagogy: Lecture, demonstrations, Studio projects

Course Outline:

- This is a continuation of the Practical Course from the previous Semester. Here students study the dynamic human figures and animal from the reference provided through live models and images and reference books. Course will allow students to apply both Drawing and fast sketching techniques as explorations to

render their works. Course also allow to use the new media like photography and video to explore the dynamic aspects of the human body and animal body.

- Drawing of Life study
- Center of Mass (COM)
- Simplification
- Silhouette
- Drawing of animals
- Art with digital platform
 - Color representation in computers: RGB, HLS, CMYK, Greyscale, Colour pallets. Graphics packages Image formats Vector Formats Pixel format.
 - Introduction to Vector Shapes and Bitmaps, Exploring the Photoshop Environment, Using the File Browser Basic Photo Corrections
 - Working with Selection Tools Layer Basics, Masks and Channels Retouching and Repairing, Working with Brushes, Customizing Brushes, Speed Painting, Matte Painting, Creating a workspace for painting, Using Colour Palette, Painting and Editing.. Basic Pen Tool, Techniques, Vector Masks, Paths and Shapes, Advanced Layer Techniques. Creating Special Effects, Preparing Images for Printing

Reference Books:

- Drawing and Anatomy by Victor Perat
- Bridgmans -- Complete Guide to Drawing from Life
- Andrew Loomis - Fun With A Pencil

Year 2 / SEMESTER 4/ SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: 2D-3D Digital Animation

Course Code: AN42

Credit: 2

Brief description of the Course:

To introduce students to 3D Animation. The aim of the module is to practically educate students on specific tools and functionalities within 3D software relevant to Animation through practical exercises and assignments. Course also allow to use the new media like photography **and** video to explore the dynamic aspects of the human body and animal body.

Learning Outcome:

- Understanding of Flash functionality and capability as a graphic editing program
- Knowledge of tools such as brushes, palettes, paths, masks, transforms, layers, filters etc.

- Understand image file formats and various image depths and their relevance
- Understand basic fundamental Principles of animation how it is applicable to 2D animation and 3D animation.
- How to identify arcs and overlapping actions on humans, creature, and props.
- Performance acting with the human like interpretation of props.

Pedagogy: Computer Lab Lecture, demonstrations, Studio based projects

Course Outline:

This is a continuation of the Practical Course from the previous Semester. Here students study the dynamic human figures and animal from the reference provided through live models and images and reference books. Course will allow students to apply both Drawing and fast sketching techniques as explorations to render their works. Motion tweening and a small loopable clip using BG and FG, and Character. A short walk cycle / a short animated clip with a story.(Min 6 seconds). The reference will be provided.

Reference Books:

- *The Animator's Survival Kit, A Manual of Methods, Principles and Formulas for Classical, Computer, Games, Stop Motion and Internet Animators*, Richard Williams
- Andrew Loomis - Fun With A Pencil

Year 2 / SEMESTER 4 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation Design

Course Title: 3D CGI Foundation

Course Code: AN43

Credit: 2

Brief description of the Course:

In this course student will introduce into 3D computer graphics application and process. They will explore basics of 3D Modeling, Texturing, Lighting and Rendering process.

Learning Objectives:

The students will receive information that will enable them to do:

- Design and develop simple 3D assets for animation film of game art.
- Modeling 3D hard surface objects,
- UV layout and preparing texture maps for several material attributes.
- 3D CG lighting with 3point studio lighting setup.
- Rendering and compositing to final outcome

Pedagogy: Computer Lab Lecture, demonstrations, Studio based projects

Course Outline:

Module – 1: 3D Assets development

- Introduction into 3D Computer Graphics, Exploring UI and three dimensional Workspace. Understand Polygon and surface modeling tools and techniques. Modeling 3D assets for Animation and Game art.

Module – 2: Shader and Texturing

- Discuss on basic material / surface properties. Understanding shader and basics shading attribute and texture maps. UV layout and Texturing, Ray tracing and rendering Reflection, Refraction properties. Understand Sub-Surface Scattering (SSS) material attribute

Module – 3: Lighting and Rendering

- Understand real life Light and shadow properties. Explore CG lights and its attributes. 3 points lighting setup, Object Based Lighting and Image Based Lighting, Global Illumination and Final Gathering techniques, Ambient Occlusion, Virtual camera and camera setup.
- Discussion on different rendering engine in brief. Understand Rendering in multi- passes and Render Layers.

Module – 4: 3D CGI Still Life

- Object Importing – Exporting through different 3D application and format. Setup Project folder and Understand scene or object referencing technique.
- Modeling, Texturing, Lighting and Rendering a 3D still life scene. Scene optimization.

Reference Books:

- *Principles of Form and Design* by Wucius Wong John Wiley & Sons, New York

Year 2 / SEMESTER 4/ SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: Concept Art & Visual Development

Course Code: AN44

Credit: 2

Brief description of the Course:

The look and setting of an animated production can take the viewer away to fantastic, imaginary places. Setting the tone for a cartoon world requires the skills of the Concept designer. This course covers the fundamental principles of Concept design, exploring a variety of matte-painting styles.

Learning Outcome:

After completing this Course students will be able to;

- Understanding different aspects of hard surface and still life objects.
- Reference collection and how to use them in a concept.
- Create Layouts for the story
- Understand how to break down an image to repeatable elements. Understand perspective and proportion to assemble a larger object based on elements
- To observe in detail, architecture and understand the role of perspective and proportion.
- To work in a team to create a concept and work on separate aspects of the concept individually while maintaining proportion, perspective and style.

Pedagogy: Computer Lab Lecture, demonstrations, Studio based projects

Course Outline:*Concept Design*

The objective is to compose a scene with multiple materials and get accustomed to hand painting textures. Students need to pay attention to layout of space, props in scene. Reflective materials along with understanding how to create lights and shadows.

Students need to create a layout consisting of both hard & soft surfaces. The entire image needs to be hand painted, with no copying or pasting from outside sources. Reference image will be provided. Props and vehicle in story - Understanding of Accessories - Functionality Diagrams - functions per accessory - purpose of using the functionality diagram.

Environment Design

Introducing students to create stylized art style environment consisting of structures, foliage and props. Within the scope of the modules students are expected to learn the best practices and approaches for creating an environment for games and movies.

Creating new concept of matte-painting. Learn about different adjustments, how to add finishing touches like adding fog and give lighting details to get realistic look.

Reference Books:

- Beginner's Guide to Digital Painting in Photoshop *By Aleksander & Tilbury,*
- Digital Painting Techniques: Practical Techniques of Digital Art Masters *By 3dtotal Publishing*
- Color and Light: A Guide for the Realist Painter *by James Gurney*
- Beginner's Guide to Digital Painting in Photoshop: Sci-fi and Fantasy *by 3dtotal Publishing*

Year 2 / SEMESTER 4 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: ELECTIVE

Course Code: EL45

Credit: 1

Brief description of the Course:

A common list of Electives is provided to all the programs of Art and Design. These elective courses focus on the interdisciplinary Subjects and digital skills. Based on the need of the program and interest among the individual students these electives are added. Every Student has to contact their mentor to choose the Electives with the help of Faculty Guide. These electives are partially taught in the class room, and the rest of the classes are focused by the student research and practice.

Year 2 / SEMESTER 4 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: CC & EC - Workshop

Course Code: CC & EC

Credit: 1

Brief description of the Course: Suitable Workshop / Activity / Project will be conducted in this semester

Simple Project :

Here Students will work in small groups and learn how to approach to the simple problems in the system. This project help them to apply the skills learnt in the previous and the present semesters and find out their importance.

YEAR 3 / SEMESTER 5

Year3 / SEMESTER 5 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: Story Design & Visual Narrative

Course Code: AN51

Credit: 2

Brief description of the Course:

This Course lay strong foundation to story visualization ability for Animation. Introduce methods and techniques of story writing and Visual narration of the story with thumbnails and images.

Learning Outcome:

- Provide skills in planning a story and developing it.
- Able to portray the Character, Plot and the conflicts in story with visual medium.

Course Outline:

Story, Narrative and Plot : Elements of story – Resources and ideas from life - Narrative modes
--Aesthetics of narration -Narrative point of view. Voices of the story - Character voice -
Unreliable voice - Epistolary voice. Structuring the story -Plot & sub plots -Plot devices – Other
Devices - Dramatic structure –Conflict - Setting mood - Rising action -Falling Action –
Dénouement – Resolution

Story Genres; Characters and the story - Developing Characters, Story, Telling and its relevance in
society- character driven stories – Event driven stories.

Reference Books:

- *The Analysis of Film* by Raymond Bellour and Constance Penley (Editor)
- *How to Read a Film: Movies, Media, and Beyond* by James Monaco
- *Film Art: An Introduction - Paperback* (Nov. 25, 2009) by David Bordwell and Kristin Thompson
- *Film Form: Essays in Film Theory - Paperback* (Mar. 19, 1969) by Sergei Eisenstein and Jay Leyda

Year3 / SEMESTER 5 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: Preproduction; Script to Animatic

Course Code: AN52

Credit: 2

Brief description of the Course:

To introduce students the importance of storyboarding. Creating Script for short clip and planning shots for clip. Adding timing for shots and making 2D animatic.

This course focuses on applying industry-standard storyboarding techniques for animation. Topics to be covered include the various purposes, formats, terminology, and concepts used in the creation of storyboards and animatic with audio.

Learning Outcome:

- Understanding of camera angles & timing for shots
- Understanding of Storyboarding and shot planning

- Understanding 2D animatic and the timing for Short clip
- Provide skills in planning a story and developing it.
- Able to portray the Character, Plot and the conflicts in story with visual medium.

Pedagogy: Lecture, demonstrations, Studio based projects

Course Outline:

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

Converting the story-board panels to animatic based on the timing of each shot. Using editing software, adding sound and voice over.

Reference Books:

- *The Art of story board* by John Hart
- *The Animation Bible: A Practical Guide to the Art of Animating from Flipbooks to Flash* [Paperback], Maureen Furniss
- *Drawn to Life: 20 Golden Years of Disney Master Classes: Volume 1: The Walt Stanchfield Lectures* [Paperback], Walt Stanchfield

Year3 / SEMESTER 5 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: Character Animation

Course Code: AN53

Credit: 6

Brief description of the Course:

To help students reinforce the fundamentals of Body dynamics the concept of weight but with the help of their live video reference. The aim of the module is to practically educate students as to understand the body dynamics at play while doing specific actions, such as simple Lifting a heavy object, and throwing an object, Jump cycle, Idle, or run cycle (for gaming).

Learning Outcome:

- Strengthen knowledge on posing and breaking down an animation.
- Understand key poses from a reference video.
- Performance acting as live reference for the animation assignment.

Pedagogy: Computer Lab Lecture, demonstrations, Studio based projects

Course Outline:

Applying the principles of animation using standard cycles -Timing the animation, Adding weight. Mastering the use of Graph editor and Dope sheet. Constraining and parenting for animation. Object Character interaction. Human Figure Walk cycles. Adding personality and appeal.

Lifting a heavy object, and throwing the object. The reference will have to be created by the student using video capture. Create either a jump cycle, idle, or run cycle (for game animation) which will help to understand how to break down loop actions. Students also need to make sure that the animation and poses are valid from all points of view.

Reference Books:

- *The Animator's Survival Kit, A Manual of Methods, Principles and Formulas for Classical, Computer, Games, Stop Motion and Internet Animators*, Richard Williams
- *Cartoon Animation (The Collector's Series)* [Paperback], Preston Blair
2. *Animation Art: From Pencil to Pixel, the world of Cartoon Anime and CGI-* Jerry Beck
- *Character Animation Crash Course!* [Paperback] Eric Goldberg

Year 3 / SEMESTER 5 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: BG Design and Development

Course Code: AN54

Credit: 6

Brief description of the Course:

In this course student will develop skills to design and make Background or Environment for their animation or gaming project. During this course they will work in both the aesthetical and the technical aspect in two different modules. In first module student will learn the designing process of 2D-3D BG layout as a part of the preproduction, where they will deal with the Composition, Lights & Color Key, Design process and aesthetics. In the next module they will develop the BG in 3D or 2D CGI, where they have to deal with Digital Painting (Raster or Vector) or 3D Modeling & Texturing.

Learning Objectives:

The students will receive information that will enable them to do:

- BG Design for preproduction development process
- Illustrate or Painting the Background scene in vector or raster art.
- 3D Modeling and texturing interior and exterior Background / Environment scene.

Pedagogy: For Module-1: Animation studio / preproduction Lab and for Module-2: 2D or 3D Computer Lab, demonstrations, Studio or Lab based projects.

Course Outline:

Module – 1: BG Layout Design (interior & exterior)

- Design Process;
- Visual Development

Module – 2: 2D-3D CGI Development (Interior & Exterior)

Note: Whole batch or individual student could go for either Option A or B or both depends on the core skill strength of the batch or the individual.

- Option A;
 - Vector Illustration or Digital Painting of the BG layout.
- Option B;
 - Preparing the Reference
 - 3D Modeling and Texturing of the BG
 - Understand the techniques of modeling Trees, Grasses & Bushes, Foliage
 - Render the Scene in Ambient Occlusion and wireframe view.

Reference Books:

- I. *Principles of Form and Design* by Wucius Wong John Wiley & Sons, New York

Year 3 / SEMESTER 5 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: ELECTIVE

Course Code: EL55

Credit: 2

Brief description of the Course:

A common list of Electives is provided to all the programs of Art and Design. These elective courses focus on the interdisciplinary Subjects and digital skills. Based on the need of the program and interest among the individual students these electives are added. Every Student has to contact their mentor to choose the Electives with the help of Faculty Guide. These electives are partially taught in the class room, and the rest of the classes are focused by the student research and practice.

Year 3 / SEMESTER 5 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: Virtual Cinematography

Course Code: AN56

Credit: 2

Brief description of the Course:

In this course student will develop skills on CG Lighting and CG Camera Fundamentals & Layout with the aesthetical point of view.

Learning Objectives:

The students will receive information that will enable them to do:

- Virtual Camera layout for 3D CGI scene.
- CG Lighting and Rendering of an Interior – Exterior scene in different time and cinematic mood.

Pedagogy: Computer Lab, Demonstrations, Computer Lab based projects.

Pre-requisite: CG assets (course outcomes | Interior and Exterior scene) from the course “BG Design and Development”.

Course Outline:

- Understand basic principles of Light
- Understand virtual Lights; Tools & Techniques.
- Understand Light Roles; Key Light, Fill Light, Bounce Light, Rim Light, Kick Light
- Understand Light quality; Intensity, Colors and Softness
- Lighting Composition
- Understand Color Key, Master Lighting and Shot Lighting
- Understand Global Illumination, Final gathering, Ambient Occlusion.
- Case Study
- Lighting setup for an Interior scene in day & night
- Lighting setup for an Exterior Scene in day & night
- Introduction to virtual Camera; Tools & Attributes.

Reference Books:

- Lighting for Animation: The Art of Visual Storytelling
- By Jasmine Katatikarn, Michael Tanzillo
- Professional Cinematography - Charles Clarke

YEAR 3 / SEMESTER 6

Year3 / SEMESTER 6 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: Game Design

Course Code: AN61

Credit: 2

Brief description of the Course:

Students are exposed to the fundamentals of game design; unpacking the principles that make games, such as chess, dice, and cards, popular across centuries and cultures. Building on this base, students analyze contemporary non-digital and digital games and discuss the risk/benefits of playing games. The result of this class is the development of an analog game prototype.

Learning Outcome:

- Establish fundamental skills in game theory,
- Understand Game design techniques,
- Proses of storytelling through game.
- Understand how to create a prototype of any game.

Course Outline:

This course examines how different media can be used as part of a unified story strategy that leverages the strengths of each, while capitalizing on the potential of the whole.

This course introduces the process of designing a level on paper and quickly iterating on designs. A major element of this course is to explore the connections between game design and level design, especially how players interact in different game types. Students learn about planning for technical limitations, as well as unexpected player interactions. The final level designs are brought into a commercial engine to further understand how the level will be seen from the player's perspective.

Reference Books:

- The Art of Game Design: A book of lenses* by Jesse Schell
- Game Feel: A Game Designer's Guide to Virtual Sensation (Morgan Kaufmann Game Design Books)* by Steve Swink
- On the Way to Fun: An Emotion-Based Approach to Successful Game Design* by Roberto Dillon

Year3 / SEMESTER 6 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: 3D Character Setup

Course Code: AN62

Credit: 4

Brief description of the Course:

Introduce students to Character Rig. The aim of the module is to develop the understanding of Character joint setup and creating controls with constraints. Understanding FK/IK arm and leg setup.

The aim of the module is to develop the understanding of a character Rig setup, Skinning and painting weights along with creating a Global control. Also use and understand deformers and rigid binding.

Learning Outcome:

- Place joints for rigs correctly with the proper orientation.

- Understand how to set up IK/FK switch for a human arm.
- To use the grouping method in an IK setup to set up various animation attributes for a leg.
- Know how to place of Eye and Jaw controls.
- Understand skinning by painting weights and using the component editor.
- Understanding the functionality of Non-linear Deformers.

Pedagogy: Lecture with Demo using computers, case study.

Course Outline:

Rigging the controls - IK and FK, Joints and hierarchies Concept of Skeleton, Connect Joint, Remove, joint, Insert joint, Re-root joint Mirror, Joint, Set preferred angle.

Trimming small weights, Normalize Weights, Export / import skin weight maps, Editing Rigid Skin, Creating and Editing Flexors, Lattice, Sculpt, joint Cluster, Painting Cluster weights, Rigid Binding Practice.

- Creating Biped Character joint structure,
- Creating Quadruped Character joint structure,
- Cleaning up the rig and scene file
- Creating and attaching controllers to the rig
- Skinning and Rigging Biped Characters
- Rigging a arm and hand, Simple rig, and Advanced rig
- Constraints, Point, Aim, Orient, Scale, Parent and Pole vector

Reference Books:

- Automatic Rigging and Animation of 3D Characters
- The Art of Rigging by George Biddlecombe
- *Learning Maya | Character Rigging and Animation* Alias|Wavefront
- *Maya Character Creation: Modeling and Animation Controls* by Chris Maraffi

Year 3 / SEMESTER 6 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: Effects Animation

Course Code: AN63

Credit: 2

Brief description of the Course:

In this course student will introduce to the basics of dynamic simulation animation like Particle & Fluid

dynamic simulation, Rigid & Soft body dynamics, hair, Fur and Cloth Dynamics animation, which is essential part in Visual Effect and Character Effect animation.

Learning Objectives:

After completing this course students will understand;

- Particle & Fluid dynamics to animate effects like fire, explosion, smoke, cloud, dust, liquid, etc...
- Rigid and soft body dynamics to animate effects like shattering, collision and other rigid & soft body interactions.
- Hair & Fur Character Effects animation
- Cloth animation

Pedagogy: Lecture with Demo using computers, case study.

Course Outline:

- Introduction to Particle & Fluid dynamics.
- Understand basics attributes of particle & Fluid dynamic.
- Understand Forces and fields
- Understand Particle Instancing and Goal
- Understand Particle path flow & Surface Flow animation.
- Rendering particle and fluid effects.
- Analyze and create various effects like fire, explosion, smoke, water body etc...
- Introduction to hair & Fur Dynamics, and understand basics attributes and properties.
- Understand hair tools, techniques and process.
- Rendering hair & Fur for your character.
- Introduction to cloth animation, and understand basics attributes and properties.
- Understand cloth simulation.

Reference Book:

- *Maya Scripting for 3D Artists: The MEL Companion* by David Stripinis (2003), published by Dreamtech Press
- *The VES Handbook of Visual Effects: Industry Standard VFX Practices and Procedures* - Jeffrey A. Okun
- *Exploring Visual Effects*, Thomson Delmar Learning.

Year 3 / SEMESTER 6/ SPECIALIZATION SYLLABUS

Program: BVA /B.Des Animation Design

Course Title: Character Design and Development

Course Code: AN64

Credit: 4

Brief description of the Course:

In this course student will develop skills to design and make characters for their animation or gaming project. During this course they will work in both the aesthetical and the technical aspect in two different modules. In first module student will learn the designing process of 2D-3D Characters as a part of preproduction. In the next module they will render the character in 3D or 2D CGI.

Learning Objectives:

The students will receive information that will enable them to do:

- Character Design for preproduction development process
- Illustrate or Painting the character in vector or raster art.
- 3D Modeling and texturing of a character.

Pedagogy: for Module-1: Animation studio / preproduction Lab and for Module-2: 2D or 3D Computer Lab, demonstrations, Studio or Lab based projects.

Course Outline:

Module – 1: Character Design

- Who your character design is aimed at. The medium; like traditional hand drawn, 3D CGI, Stop Motion, etc... Understand Character's attributes / Character traits.
- Goal or dream of the character, The back story
- Understand Construction (Shapes, Variance & size), proportion, Contrast and silhouette.
- Motivation from a reference, Anthropomorphism, Exaggerations, Visualization
- Developing Personality
- Character's Accessories & Cloth study
- Poses and Gestures, Body Language, Facial Expression
- Characters Scale chart
- Model sheet, Turntable.
- Character Bible.
- Case study.

Module – 2: 2D-3D Character Development

Note: Whole batch or individual student could go for either Option A or B or both depends on the core skill strength of the batch or the individual.

- Option A;
 - Vector Illustration or Digital Painting of the Character Model sheet, Poses, Expressions sheet

- Option B;
 - 3D Modeling of the character from the given model sheet
 - Understand the techniques of modeling Hairs & Fur
 - Modeling Cloth and accessories.
 - UV Layout & Texturing
 - Character Lighting & rendering
 - Render Character Turntable.

Reference Book:

- *Principles of Form and Design* by Wucius Wong John Wiley & Sons, New York

Year 3 / SEMESTER 6 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: ELECTIVE

Course Code: EL65

Credit: 2

Brief description of the Course:

A common list of Electives is provided to all the programs of Art and Design. These elective courses focus on the interdisciplinary Subjects and digital skills. Based on the need of the program and interest among the individual students these electives are added. Every Student has to contact their mentor to choose the Electives with the help of Faculty Guide. These electives are partially taught in the class room, and the rest of the classes are focused by the student research and practice.

Year 3 / SEMESTER 6 / SPECIALIZATION SYLLABUS
Program: B.V.A. / B.Des Animation and Game Art

Course Title: Postproduction

Course Code: AN66

Credit: 4

Brief description of the Course:

The purpose of this course is to provide the students with training methodologies and specific industry skills that will assist them in creating visual effects used in compositing and VFX industry

Learning Objectives:

After completing this course students will understand;

- Digital offline non-linear Audio-Video Editing
- Layer based and Node based Video Compositing and Color Grading
- Creating Visual Effects

Pedagogy:

Lecture with Demo using computers. Requires Computer Lab, Green Screen, Camera and lighting setup.

Course Outline:**Module – 1: Audio-Video Editing**

- Fundamentals of audio-video Editing, Digital non-linear Editing tools, techniques & process. Video Compression and different file formats. Exporting final outcome to different medium.

Module – 2: Introduction to Layer Based Compositing

- Understand multi layers based compositing, layers Blending Modes. Understand layer animation, Introduction to Motion Graphics, Nesting Composition, different Color channels, Matte and Alpha channel. Layer Masking and Rotoscoping, Color Keying tools and techniques.
- Understand Color Correction tools and process. Working with layer Effects and animating Effects. Text tools and Text animation
- Understand Rotoscoping, 3D layers, Camera setup and animation, Video stabilization and camera tracking and Rendering

Reference Book:

- Digital Compositing for Film and Video (Focal Press Visual Effects and Animation Series) - Steve Wright
- The Art and Science of Digital Compositing, Second Edition: Techniques for Visual Effects, Animation and Motion Graphics (The Morgan Kaufmann Series in Computer Graphics) - Ron Brinkmann
- After Effects Apprentice - Chris and Trish Meyer

YEAR 4 / SEMESTER 7

Year 4 / SEMESTER 7 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: Animation Studio Design & Management

Course Code: AN71

Credit: 2

Brief description of the Course:

This course will briefs about the various stages involved in Animation production process from project concept to projection realization . Course introduces detailed planning, client interaction, Project pitching, team work. Introduces Administrative and managerial skills required in Animation studio.

Learning Objectives:

- After completing the course students will be able to;

- Plan, and pitch the animation project
- Interact with Client.
- Estimate the production cost
- Manage the studio

Pedagogy: Lecture, demonstrations, Presentation

Course Outline:

Production pipeline – Study of various mediums of production such as Film, T.V, Games, etc

Requirement for a Production Pipeline - The process and the pipeline - A typical pipe line

Infrastructure-Tools-Hardware-Software - Pipeline Management - Project Management

The work force - The recruitment - Studio Design - India scenario

MARKET : Market survey - Present trend and technology - Process involved in Pitching and executing project

Studio design and Management - Intellectual Property and Copyright Laws

Independent film Making - Project reports and Budgeting

Reference Books :

- Dream Worlds: Production Design for Animation by Hans Bacher and Don Hahn
- Creating 2D Animation in a Small Studio (Gardner's Guide series) by Bill Davis

Year 4 / SEMESTER 7 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: Portfolio Development

Course Code: AN72

Credit: 2

ALL students must submit a show reel; it is a mandatory part of the final degree submission. If any student fails to submit her/his show reel, the final submission will be considered incomplete and will have to follow the rules as applicable. The final degree project will be considered incomplete and a decision of the jury will be final under such circumstances.

Year 4 / SEMESTER 7 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: Major Elective:

Course Code: ANEL73.1/2/3/4/5

Credit: 6

Enhance Maya skill set by learning about advanced techniques and tools that can help students to approach modeling nearly any shape with confidence. In this course, students learn deep into modeling / Animation with Maya.

ANEL73.1: 2D - 3D Animation

Brief description of the Course:

To enhance observational skills to improve eye for detail. Students learn to create and exhibit realistic modular 3d environment structures and props aimed for a video/console game specifications.

This course will introduce some of the complex advance animation. Introduces Character Animation Character poses, character acting Character interaction etc.

Learning Objectives:

- After completing this course students will be able to;
- Execute Character animation, Character acting and Character interaction etc.

Pedagogy: Computer Lab, Lecture and Demo using Software: Autodesk Maya

Course Outline:

Animating a scene

Blocking and staging the animation (Situation based) with multiple characters

Animating the scene (Situation based) with multiple characters

Fine-tuning the animation

Facial animation with blending expression shapes

Lip sync Animation

Body and Lip sync animation for a Dialogue

Working with Motion capture data

Refinement of the Final Animated Scene

Reference Books :

“Advanced Macromedia Flash Professional 08” by John Ulliman

“The Animator’s Survival Kit” by Richard Williams

“The Animator’s Workbook” by Tony White

“Shot by shot visualizing from concept to screen” by Steven D. Katz

“Acting for Animators” by Ed Hooks

ANEL73.2: 3D CGI for Animation Film

Brief description of the Course:

Introducing students to create stylized art style environment consisting of structures, foliage and props. Within the scope of the modules students are expected to learn the best practices and approaches for creating and environment for movies.

Learning Objectives:

After studying this course, you should be able to:

- Strengthened modeling skills, discipline and techniques for organic modeling.
- Stylized Texture creation through photoshop and zbrush
- Ability to assemble multiple assets to compose a scene
- Hyper realistic Character Modeling and Texturing
- Familiarize with digital sculpting
- Describe how to paint with 3D Tool

Pedagogy: Computer Lab, Lecture and Demo using software: Autodesk Maya

Course Outline:

Modelling the Structure and Foliage

Planning, Reference study and Modeling>

Creating textures through sculpting

Assembling the modeled pieces to create the structure also modeling the Foliage

Foliage texturing and ground cover and assembling the scene

Hyper realistic Character Modeling and digital sculpting

Modeling the hyper realistic Human Face

Modeling the hyper realistic Human body

Quadruped Modeling

Adding hyper realistic detail with Digital sculpting tool

Hyper Realistic Texturing

Character Texture painting with Photoshop and 3D painting tool

Image based Texturing (Image Projection) and Painting UV seams

Creating Bump, Normal, Displacement and Specular map

Reference Books :

- *Mastering Maya* by John Kundert- Gibbs, Mick Larkins, Dariush Derakhshani and Eric Kunzendorf
- *Introducing ZBrush 4* By Eric Keller
- *ZBrush Studio Projects: Realistic Game Characters* By Ryan Kingslien.
- *ZBrush Character Creation: Advanced Digital Sculpting, 2nd Edition* By Scott Spencer

ANEL73.3: 3D CGI for Game Art

Brief description of the Course:

Create both high-poly and low-poly versions of a vehicle, with the goal of creating normal, AO and specular maps. Students learn how to create error-free normal maps and use them on low-poly models.

The aim of the module is to create a digital set from a concept designed.

Learning Objectives:

After studying this course, you should be able to:

- Develop a low-poly vehicle (5k tris) along with a high-poly version.
- Stylized Texture creation through photoshop and zbrush
- Ability to assemble multiple assets to compose a scene
- Character Modeling and Texturing in 3 Level of Details(LOD).
- The ability to create a realistic character as per specification for games.
- Using normal, AO and specular maps on a low-poly model.
- Familiarize with digital sculpting
- An understanding of game platforms and audience differences as they relate to CG art
- The ability to define character and to represent characteristics in computer-generated humanoids.

Pedagogy: Computer Lab, Lecture and Demo using software: Autodesk Maya

Course Outline:

Modeling the Vehicle

Planning, Reference study and model.

Create a high and low-poly (5k tris) Combat Vehicle. Extract normal and AO maps. Create specular maps as necessary. A max of four textures may be used. To create textures with history.

Foliage texturing and ground cover and assembling the scene

Hyper realistic Character Modeling and digital sculpting

Creating the base Mesh by understanding stylizations: posture, weight, attitude, proportions

Creating the head, Sculpting the body/ Costumes and accessories: Create drapery, cloth wrinkles and other fabric details.

Unwrapping and extracting maps: Unwrapping techniques used for an organic model

Texturing the game character: Creating Color, Normal, Specular, Gloss, SSS and other special maps

Quadruped Modeling

Adding hyper realistic detail with Digital sculpting tool

Hyper Realistic Texturing

Character Texture painting with Photoshop and 3D painting tool

Unwrapping and extracting maps: Unwrapping techniques used for an organic model

Texturing the game character: Creating Color, Normal, Specular, Gloss, SSS and other special maps

Reference Books :

- *Mastering Maya* by John Kundert- Gibbs, Mick Larkins, Dariush Derakhshani and Eric Kunzendorf
- *Introducing ZBrush 4* By Eric Keller
- *ZBrush Studio Projects: Realistic Game Characters* By Ryan Kingslien.
- *ZBrush Character Creation: Advanced Digital Sculpting*, 2nd Edition By Scott Spencer

ANEL73.4: VFX & Compositing

Brief description of the Course:

An elective course for digital filmmaking majors and minors. This course introduces the student to the art and science of visual effects and compositing for digital filmmaking. Topics covered include the visual effects workflow, video and imaging technology, image processing, matte creation, tracking, re-timing, 2D animation, and 3D virtual scenery.

Learning Objectives:

After studying this course, you should be able:

- To understand the science of creating advanced fluid and gaseous simulations
- To create motion graphics by integrating mixed medias
- Familiarize the tools and techniques to create standard VFX shots
- To create a complete visual effects shot from visualization to final shot
- Learn Problem solving techniques to rectify the errors during compositing.

Course Outline:

Advanced CG Simulations

Fluid Dynamics theory and algorithms, Creating liquids of different viscosity and surface tension, third party fluid simulation tools and plugins

Crowd Simulations, Fire and Smoke simulations, Non –Physics simulations, Complex simulations, Rendering and exporting simulations

Motion graphics, typography animation, scripting animation and effects, Broadcast design, workflow for motion graphics, color grading for exporting

Instructional animation and simulations, Data visualizations

Advanced dynamics

- Fields, Rigid bodies and constraints
- Particle system & Particle Expressions
- Fluid Effects
- Fire, Smoke, Fireworks, Surface flow, Curve flow
- nDynamics, Hair & Fur and Real flow

Compositing: Color, Camera and Tracking

Stabilization/Color Correction. Colour manipulation tools, Filters, Colour Manipulation using Blending Mode, Layer Blending. Advanced Colour Correction Creating Mood for the scene Tinting Footages, Exposure Adjustments, Brightness and Contrast. Learning to stabilize camera shake and jitter, Analyzing Footage for shake, Using stabilize option - Camera Tracking: Tracking Concept, Using footage elements in tracking, 2D Tracking, Using the Data of Tracking. 3D Tracking, Constraints of 3D Tracking, Using the Data of Tracking, Advanced Tracking Techniques.

- Introduction to Tracking
- Introduction to Keying
- Retouching, Object, Track Marker & Wire Removals
- Multilayer compositing

Reference Books :

- Digital Compositing for Film and Video (Focal Press Visual Effects and Animation Series) - Steve Wright
- Nuke 101: Professional Compositing and Visual Effects - Ron Ganbar
- The VES Handbook of Visual Effects: Industry Standard VFX Practices and Procedures -
- After Effects Apprentice - Chris and Trish Meyer
- Matchmoving: The Invisible Art of Camera Tracking - Tim Dobbert

ANEL73.5: Pre-production

Brief description of the Course:

This course will impart skills of conceptualizing and designing characters for the story.

To provide knowledge and information for designing the layouts in colour. This course focuses on applying industry-standard storyboarding techniques for animation. Topics to be covered include the various purposes, formats, terminology, and concepts used in the creation of storyboards and animatic with audio. Creating story for short clip and planning shots for clip. Adding timing for shots and making 2D animatic.

Learning Objectives:

After studying this course, you should be able:

- Create Character Designs for the story.
- Create Layout design for the story.
- Understanding of camera angles & timing for shots
- Understanding of Storyboarding and shot planning
- Understanding 2D animatic and the timing for Short clip

Pedagogy: Lecture and Demo

Course Outline:

Character Design

Character Visualization , Character Bible, Stereotypes, Developing Character for Comics, Films and TV Episode. Elements of Character Design Creating Characters from Life.

Anthropomorphism , Definition and meaning, Use of Anthropomorphic Characters in Modern Literature, Films and Television, Theo Morphs and Pathetic Fallacy.

Preparing handouts, Importance of Handouts, Various Elements of Handouts, Model Sheet, Turnaround Sheet, Proportion Chart, Scale Sheet, Expression and Mouth Chart, Color Ref Sheet, Prop Sheet, Contemporary Designs.

Storyboarding:

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

Taking Picture in different camera angle and shots. Understanding camera cuts and hook-up match. Creating Short story for short clip. Adding details in storyboard and refining it on basis of animation and adding timing for 2D animatic.

Reference Books:

- *The Art of story board* by John Hart
- *'How to Write for Animation'* by Jeffrey Scott's book
- *The Animation Bible: A Practical Guide to the Art of Animating from Flipbooks to Flash* [Paperback], Maureen Furniss

Year 4 / SEMESTER 7 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: Animation Research Project Part I

Course Code: AN74

Credit: 8

Brief description of the Course:

The focus of this course is on preproduction, or the planning phase of media production. Topics include story development and visualization for linear narrative, incorporating the languages of graphic design and cinema. Project planning and budgeting will also be addressed. Students will apply these principles toward the creation of sequential images (storyboards) for the purpose of visual storytelling. Projects will emphasize brainstorming, story concept & development, storyboards and animatic / pre-visualizations, edited with sound FX, dialogue and music.

Course Outline:

Part one will consist of all **Pre-production** for the short animated degree film.

Students are expected to take up an independent study and production of a Short Animated Film. The film may be 2 – 5 minutes in duration. The project may be done independently or in a group not larger than 4-5 members. The project must be well researched with adequate time spent on information collection, a thorough documentation of all the sources with appropriate credits provided for the information from books, websites, people, organizations etc

The film must be a clear indication of the maturity, responsibility and concern the student is capable of demonstrating

- 1 This must be conveyed through the content in the film
- 2 Concept and craft skills
- 3 Imagination and innovation
- 4 Execution of the product with professionalism
- 5 Time frames and deadlines
- 6 Contact with teachers during the project
- 7 Ability to be a team player and leader
- 8 Integrity of the product in terms of credits and following copyright laws

- 9 Documentation of the process and presentation of the final film
- 10 Ability to articulate, communicate and present the project

Year 4 / SEMESTER 7 / SPECIALIZATION SYLLABUS
Program: B.DES Animation and Game Art

Course Title: ELECTIVE

Course Code: EL75

Credit: 2

A common list of Electives is provided to all the programs of Art and Design. These elective courses focus on the interdisciplinary Subjects and digital skills. Based on the need of the program and interest among the individual students these electives are added. Every Student has to contact their mentor to choose the Electives with the help of Faculty Guide. These electives are partially taught in the class room, and the rest of the classes are focused by the student research and practice

Year 2 / SEMESTER 3/ SPECIALIZATION SYLLABUS
Program: M.DES / Animation and Game Art

Course Title: Design Thesis (Dissertation)

Course Code: AN76

Credit: 6

Brief Description of the Course:

This course will introduce Research Methodology in its true sense to students to carry out their thesis in a professional manner.

Learning Objectives:

- Dissertation or the thesis chosen by students shall guide them to explore more in the field of their interest to emerge with a better design solution in the future.

Pedagogy: Discussions, Data collection, Case study and Research, Surveys, Interviews and Transcribing

Course Outline:

- Students will have two options :
 1. Independent research. Data collection, analyses and contextualisation.
 2. Research and Data Collected can be base of their Graduation Project in 4th semester and Outcome of thesis can be implemented in Design project.
- The department will schedule the viva voce at its convenience only after the receipt of the thesis by the student. The performance sheet submitted by the guide and thesis committee should be the basis for allowing the student to appear for the final viva voce.
- Students will have to independently write a Dissertation of minimum 40,000 words.

References:

- *The Designer says – Quotes, Quips and Words of wisdom*

YEAR 4 / SEMESTER 8

Year 4 / SEMESTER 8 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: Project -Part II (Continued from Semester VII)

Course Code: AN81

Credit: 16

Brief description of the Course:

Part two will consist of all **Production and Post-production** for the short animated degree film.

Students are expected to take up an independent study and production of a Short Animated Film. The film may be 2 – 5 minutes in duration. The project may be done independently or in a group not larger than 4-5 members. The project must be well researched with adequate time spent on information collection, a thorough documentation of all the sources with appropriate credits

ALL students must submit a show reel; it is a mandatory part of the final degree submission. If any student fails to submit her/his show reel, the final submission will be considered incomplete and will have to follow the rules as applicable. The final degree project will be considered incomplete and a decision of the jury will be final under such circumstances.

Year 4 / SEMESTER 8 / SPECIALIZATION SYLLABUS

Program: B.V.A. / B.Des Animation and Game Art

Course Title: Internship

Course Code: AN82`

Credit: 10

Course Description:

Objective of providing an internship to the students is to provide them exposure to the outside world on which their confidence builds. In this Course students will be working on a live project in a Design Studio environment / an Organization similar to that with hands on experience in Research and Product development.

OR

Student will be put under the guidance of an external resource person from the Industry/ Research / Similar Organization