



Deccan Education Society's
Fergusson College (Autonomous)
Pune

Learning Outcomes-Based Curriculum
for 3 / 4 years B. Sc. Programme
as per guidelines of
NEP-2020

for
T. Y. B. Sc. (Animation)
With effect from Academic Year
2025-2026



Deccan Education Society's

Fergusson College (Autonomous), Pune-4Department of **Animation**

Program Outcomes (POs) for B. Sc. Animation	
PO1	Academic Competence: (i) Create competence in the fields of Computer Graphics assets creation, Visual Effects, Gaming and Graphic designing. (ii) Understand the ongoing changing trends and keep them updated with the latest technology. (iii) Produce creative and technical skills in various domains of Animation, Gaming, VFX and multimedia. This will enable them to be employed globally.
PO2	Personal and Professional Competence: (i) Use critical thinking skills and problem-solving strategies for overall development of the professional growth in the fields like Animation, VFX, gaming, and graphics. (ii) Carry out industry orientated new technologies and new trends in animation, VFX & graphics. (iii) Create ample opportunities to work effectively to emerge as an acceptable team leader by working on team projects & assignments.
PO3	Research Competence: (i) Apply technical knowledge and methodologies from animation softwares in order to conduct research and demonstrate appropriate skill to seek solutions to problems that emerge in various fields of 3d animation & VFX simulations
PO4	Entrepreneurial and Social competence: (i) Develop Entrepreneurial capabilities considering animation industry works mainly on freelancing and individual creativity. (ii) Build adequate knowledge, skill, dedication and work ethics required for accomplishment of the assigned task and strengthen social competency skills. (iii) Able to demonstrate their acquired knowledge for the growth of social and ethical values in outdoor activities, such as service learning, internships and field work. (iv) Maintain and develop ethics of Media, Animation & Gaming Industry as these industries plays vital role in today's generations

	Program Specific Outcomes (PSOs) for T. Y. B. Sc. Animation
PSO No.	Program Specific Outcomes (PSOs) Upon completion of this programme the student will be able to
PSO1	Academic competence: (i) Create competence in the fields of Computer Graphics assets creation, Visual Effects, Gaming and Graphic designing. (ii) Understand the ongoing changing trends and keep them updated with the latest technology. (iii) Produce creative and technical skills in various domains of Animation, Gaming, VFX and multimedia. This will enable them to be employed globally.
PSO2	Personal and Professional Competence: (i) Use critical thinking skills and problem-solving strategies for overall development of the professional growth in the fields like Animation, VFX, gaming, and graphics. (ii) Carry out industry orientated new technologies and new trends in animation, VFX & graphics. (iii) Create ample opportunities to work effectively to emerge as an acceptable team leader by working on team projects & assignments.
PSO3	Research Competence: (i) Apply technical knowledge and methodologies from animation softwares in order to conduct research and demonstrate appropriate skill to seek solutions to problems that emerge in various fields of 3d animation & VFX simulations
PSO4	Entrepreneurial and Social competence: (i) Develop Entrepreneurial capabilities considering the animation industry works mainly on freelancing and individual creativity. (ii) Build adequate knowledge, skill, dedication and work ethics required for accomplishment of the assigned task and strengthen social competency skills. (iii) Able to demonstrate their acquired knowledge for the growth of social and ethical values in outdoor activities, such as service learning, internships and field work. (iv) Maintain and develop ethics of Media, Animation & Gaming Industry as these industries play a vital role in today's generations.

T Y B Sc. NEP 1.0						
Semester	Paper	Paper Code	Title	Type	Credits	Exam Type
V	Major	ANI-301	3D Animation	Theory	2	CE+ESE
		ANI-302	Open Source 3D Techniques I	Theory	2	CE+ESE
		ANI-303	Sculpting	Theory	2	CE+ESE
	Elective	ANI-304	VFX I	Theory	2	CE+ESE
		ANI-305	Practical in VFX I	Practical	2	CE+ESE
		OR				
		ANI-306	Game Design	Theory	2	CE+ESE
		ANI-307	Practical in Game Design	Practical	2	CE+ESE
	Major	ANI-311	Practical in 3D Animation	Practical	2	CE+ESE
		ANI-312	Practical in open source I	Practical	2	CE+ESE
	VSC	ANI-331	Web Design	Theory	2	CE
		ANI-332	Practical in Web Design	Practical	2	CE
	Minor	BVM-325	Media Ethics & Cyber security	Theory	2	CE+ESE
		BVA-325	IPR & Cyber Security	Theory	2	CE+ESE
	FP	ANI-345	Field Project	Practical	2	CE

Semester	Paper	Paper Code	Title	Type	Credits	Exam Type
VI	Major	ANI-351	Python	Theory	2	CE+ESE
		ANI-352	Open Source 3D Techniques II	Theory	2	CE+ESE
		ANI-353	Creative Writing	Theory	2	CE+ESE
	Elective	ANI-354	VFX II	Theory	2	CE+ESE
		ANI-355	Practical in VFX II	Practical	2	CE+ESE
		OR				
		ANI-356	Game Production	Theory	2	CE+ESE
		ANI-357	Practical in Game Production	Practical	2	CE+ESE
	Major	ANI-361	Sound for Animation	Practical	2	CE+ESE
		ANI-362	Practical in open source II	Practical	2	CE+ESE
	VSC	ANI-382	Animation Project	Practical	2	CE
	Minor	BVM-375	Portfolio	Theory	2	CE+ESE
		BVA-375	Portfolio	Theory	2	CE+ESE
	OJT	ANI-395	OJT	Theory/Practical 1	4	CE

T.Y. B.Sc. Semester V		
	ANI-301-3D Animation Major-Theory	
	Number of Credits: 02 Number of Hours: 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive level
CO1	Describe the production pipeline of 3D animation.	6
CO2	Discuss the art and style carried in 3D Animation.	5
CO3	Determine various animation techniques with basic principles of animation.	2
CO4	Apply action analysis and observations to animated drawings.	4
CO5	Analyze basic animation movements for characters or objects.	3
CO6	Create drawings that represent actions and emotions.	1

ANI-301-3D Animation
(Major-Theory)

Unit No.	Title of Unit and Contents	No. of hours
I	Animation Basics 1.1 Principles of Animation 1.2 Fundamental of Animation 1.3 Animation workflow 1.4 Block out Animation 1.5 Understanding Transforms parameters 1.6 3D Cursor and origin point	6
II	Animation tools 1.1 Timeline 1.2 Dopesheet 1.3 Graph editor 1.4 Interpolation modes 1.5 NLA Editor 1.6 Playblast renders	6
III	Body Dynamics 3.1 Studying realistic motions 3.2 Anatomy and physiology 3.3 Complex character rigs 3.4 Concepts of IK and FK 3.5 Case study of IK and FK 3.6 Adding Personality in Animation 3.7 Storytelling through motions	6
IV	Acting 4.1 Body language 4.2 Facial animation 4.3 Lip sync 4.4 Techniques of subtext and subtlety 4.5 Enhancing Actions with Secondary Actions 4.6 Polishing Animation 4.7 Cinematography and composition	6
V	Industrial Animation	4

	5.1 Functionality of industrial mechanism 5.2 Machine Rigs 5.3 Loop Animation 5.4 Linear Actions	
VI	Cameras and Test Renders 6.1 Camera Sequencer 6.2 Ubercam 6.3 Camera Rigs and motion 6.4 Playblast render 6.5 Test Render	2

Learning Resources -Reference

Sr. No	References
1	The Animator's Survival kit (Richard Williams
2	Acting for Animators
3	Cartoon Animation
4	Timing for Animation

ANI-302- Open Source 3D Techniques I		
Major-Theory		
	Number of Credits: 02 Number of Hours: 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive level
CO1	Recall 3D Concepts for Production	6
CO2	Discuss & Differentiate various tools used for 3d modelling in Blender	5
CO3	Execute modelling and texturing techniques for blender	4
CO4	Analyze different lighting conditions and apply them in your scene	3
CO5	Try different conditions for modelling, lighting and rigging.	5
CO6	Create a complete scene using modelling, texturing and lighting tools.	1

ANI-302- Open Source 3D Techniques I
(Major-Theory)

Unit No.	Title of Unit and Contents	No. of Lectures
1	Overview of Blender Interface 1.1 Blender Interface and Workspace 1.2 Viewport Shading 1.3 Navigating through 3D Space 1.4 Working with Outliner 1.5 Understanding Tranforms parameters 1.6 3D Cursor and origin point	4
2	Modelling Overview 2.1 Basic Modelling Concepts 2.2 Understanding the workflow of modelling for production 2.3 Advanced Modelling Tools 2.4 Vertex Groups	4
3	Modifiers 3.1 Introduction to modifiers 3.2 Modifiers types 3.3 Generate – Modifiers 3.4 Deform – Modifiers 3.5 Physics –Modifiers	5
4	Shaders 4.1 Understanding the Shaders 4.2 Unwrapping 4.3 Texturing 4.4 PBR 4.5 Procedural Shaders 4.6 HDRI	5

5	Lighting 5.1 Types of Lights in Blender 5.2 Fundamentals of lighting 5.3 Understanding the Physical lights 5.4 Global Illumination 5.5 Subsurface scattering 5.6 Raytracing 5.7 Light paths	7
6	Rigging 6.1 Armature and bone setup 6.2 Understand the human rig 6.3 Concept of IK and FK in rigging 6.4 Hierarchy and relations 6.5 Shape keys and its uses 6.6 Uses of Constraints 6.7 Drivers	5

Learning Resources –References

Sr.No	References
1	"Blender for Dummies" by Jason van Gumster
2	"Blender 3D: Noob to Pro" (Free online book)
3	"The Blender Bible" by Jason van Gumster
4	Python Crash Course, 2nd Edition: A Hands-On, Project-Based Introduction to Programming
E-Resources	Blender Guru (Andrew Price) Website: BlenderGuru.com
	Free tutorials, especially well-known for the "Donut Tutorial" which teaches Blender basics
	Udemy: Blender 3D: Your First 3D Animation A beginner course that covers everything from modeling to animating in Blender
	CG Cookie Website: CG Cookie Blender Tutorials
	A paid platform offering professional Blender courses and training for various skill levels.

	ANI-303-Sculpting Major-Theory	
	Number of Credits: 02 Number of Hours : 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Identify basic sculpting tools and their functions	6
CO2	Demonstrate the ability to sculpt simple forms and shapes using digital sculpting features.	4
CO3	Apply the principles of anatomy and design to create detailed character sculptures.	4
CO4	Analyze and evaluate different sculpting techniques to achieve realistic textures and details.	3
CO5	Modify and refine sculptures through retopology, UV unwrapping, and texturing in Blender.	4
CO6	Create a fully sculpted 3D model, ready for rendering or animation	1

**ANI-303-Sculpting
(Major-Theory)**

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction to Digital Sculpting 1. What is Digital Sculpting? 2. Digital Sculpting Software Overview 3. Basic Tools and Interface in Digital Sculpting 4. Anatomy for Digital Sculpting 5. Understanding 3D Modeling and Digital	5
2	First Sculpt 1. Setting Up Your Workspace 2. Creating a Base Mesh 3. Using Digital Brushes for Sculpting 4. Adding Volume and Detail 5. Smooth and Refine Your Model 6. Basic Texturing and Materials	4
3	Sculpting human bust 1. Analyzing human face anatomy 2. Creating a Base Mesh 3. Adding features to base mesh 4. Adding Details 5. Polishing your sculpt 6. Basic Texturing and Materials	4
4	Creature/Alien Sculpting 1. Starting from scratch 2. Working with Dyno topo 3. Importing stencils and VDMs 4. Detailing your sculpt 5. Baking maps	5
5	Sculpting Props 1. Importing Base mesh 2. Working on surface details 3. Speed Sculpting 4. Sculpting Cloth	5

	5. Vertex painting	
6	Hard surface sculpting techniques 1. Importing Base mesh 2. Working on surface details 3. Speed Sculpting 4. Sculpting Cloth 5. Vertex painting	4

Learning Resources References:

Sr.No	References
1	“Cartoon Animation”, Preston Blair, Walter T. Foster, Apple Press, Limited, Eighth Edition, ISBN 1560100842
2	“History of Animation”: Facts and Figures, Bredson, Philps Cardiff, Pearson Publications,

ANI-304-VFX I Elective A-Theory		
	Number of Credits: 02 Number of Hours : 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Identify and overview of visual effects Industry	6
CO2	Compositing Fundamentals the process of combining visual elements	
CO3	Key concepts Understanding Nodes Working with 2D and 3D concepts	5
CO4	Advanced Techniques Tracking and match moving process.	
CO5	Rendering and Final Output, Industry Practices & Workflow Understanding pipeline management and integration.	5
CO6	Project Work and Portfolio Development.	1

ANI-304-VFX I**Elective A-Theory**

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction to VFX 1.1 History of VFX and its evolution in film and media. 1.2 Key principles of VFX: Composition, layering, and integration. 1.3 Overview of VFX tools and software (e.g., Adobe after Effects, Houdini, Nuke). 1.4 Setting up a VFX pipeline. 1.5 Understanding the role of compositing in VFX	6
2	Understanding Visual Language & Composition 2.1 Visual storytelling in VFX. 2.2 The importance of lighting, camera angles, and perspective in VFX. 2.3 Shot analysis and breakdown (green screen, 3D integration). 2.4 Working with Images, Colors 2.5 Image formats, bit depth, and color management	8
3	Digital Compositing Basics 3.1 Introduction to compositing software (e.g., Nuke, After Effects). 3.2 Creating masks for compositing. 3.3 Keying and Rotoscoping (green screen, tracking shots). 3.4 Basics of layering and combining 2D/3D elements.	8
4	Motion Tracking and Camera Matching 4.1 Motion tracking techniques (2D and 3D tracking). 4.2 Camera tracking and matching live-action footage with 3D elements. 4.3 Understanding parallax and its effect on compositing	8

Learning Resources References:

Sr. No	References
1	Welcome to the Nuke Online Help
2	The foundry Education: Each chapter in this section explains in detail a key feature of Nuke. You can use the section to familiarize yourself with the features you are particularly interested in, or to get answers to specific problems that arise during compositing. For information on the features in NukeX and Nuke Studio, see Advanced Compositing with NukeX and Nuke Studio or Timeline Editing in Nuke Studio
3	Welcome to the Nuke Online Help

ANI-305-Practical in VFX I Elective A-Practical		
	Number of Credits: 02 Number of Hours : 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Identify and overview of visual effects Industry	6
CO2	Compositing Fundamentals the process of combining visual elements	1
CO3	Key concepts Understanding Nodes Working with 2D and 3D concepts.	5
CO4	Advanced Techniques Tracking and match moving process.	
CO5	Rendering and Final Output, Industry Practices & Workflow Understanding pipeline management and integration.	5
CO6	Project Work and Portfolio Development.	1

ANI-305-Practical in VFX I
Elective A-Practical

Unit No.	Title of Practical
1	Assignment: Watch a film or short clip and identify the different VFX techniques used.
2	Assignment: Create a storyboard for a VFX shot that integrates live-action footage with Digital elements.
3	• Rotoscoping: Isolating elements from a scene for use in other shots (e.g., removing backgrounds). • Green/Blue Screen Keying: Techniques for separating a subject from a green or blue background to place it in a different environment. Assignment: Composite a simple green-screen shot with background imagery.
4	Simulations • Particle Systems: Creating and controlling particles for effects like fire, smoke, and sparks. • Fluid Simulations: Simulating liquids like water, oil, or lava. • Cloth and Hair Simulation: Making fabric and hair react realistically in a 3D environment. • Destruction and Rigid Body Dynamics: Simulating realistic destruction of objects or environments, like buildings or vehicles. Assignment: Track a moving object and integrate a 3D model into the shot.

	ANI-306-Game Design Elective B-Theory	
	Number of Credits: 02 Number of Hours : 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Recall Game design thinking process	6
CO2	Understand Systems Thinking to understand our world and existing games to transfer those experiences into your own game.	5
CO3	Execute the Design Thinking method to improve your design process	4
CO4	Analyze different lighting conditions and apply them in your scene	3
CO5	Try different conditions for modelling, lighting and rigging.	5
CO6	Create game ready animation loops and optimized 3D model.	1

**ANI-306-Game Design
(Elective B-Theory)**

Unit No.	Title of Unit and Contents	No. of Lectures
1	Game Design Basics 1.1 What is Game Design 1.2 The Role of Game designer 1.3 Game Mechanics 1.4 Working with Outliner 1.5 Understanding Transforms parameters 1.6 3D Cursor and origin point	3
2	Introduction to Gaming 2.1 History of Video games 2.2 Video games generations 2.3 Video games genre 2.4 Classification by technology 2.5 Rating video games 2.6 Structure and functioning of gaming company	5
3	Game Design Thinking Process 3.1 Game Design Thinking Process 3.2 Game Concept 3.3 Ideation 3.4 Decision Making 3.5 The 5 Phases of Player decision making 3.6 System Thinking 3.7 Systematic game design	7
4	Game Design Document 4.1 Understanding GDD 4.2 Elements of GDD 4.3 Communicating your game 4.4 Game Screen Flows 4.5 Word processor GDD	5

5	Art of Level Design 5.1 Developing your concept 5.2 Design Principles 5.3 Setting up Challenges 5.4 Shaping the Actions 5.3 White Boxing 5.4 Adding Functionality	6
6	Psychology in Game 6.1 Player Psychology 6.2 Psychology of color in game	4

	ANI-307-Practical in Game Design Elective B-Practical	
	Number of Credits: 02 Number of Hours : 60	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Recall Game design thinking process	6
CO2	Understand Systems Thinking to understand our world and existing games to transfer those experiences into your own game.	5
CO3	Execute the Design Thinking method to improve your design process	4
CO4	Analyze different lighting conditions and apply them in your scene	3
CO5	Try different conditions for modelling, lighting and rigging.	5
CO6	Create game ready animation loops and optimized 3D model.	1

**ANI-307-Practical in Game Design
(Elective B-Practical)**

Unit No.	Title of Unit and Contents
1	Create a Board OR Card Game
2	Write GDD for a game
3	Create a level design for 2D Platformer
4	Create Sprites for FX and UI for games.
5	Optimize 3D model for game
6	Animate 3D characters for game

	ANI-311-Practical in 3D Animation Major-Practical	
	Number of Credits: 02 Number of Hours : 60	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Recall Game design thinking process	6
CO2	Understand Systems Thinking to understand our world and existing games to transfer those experiences into your own game.	5
CO3	Execute the Design Thinking method to improve your design process	4
CO4	Analyze different lighting conditions and apply them in your scene	3
CO5	Try different conditions for modelling, lighting and rigging.	5
CO6	Create game ready animation loops and optimized 3D model.	1

ANI-311-Practical in 3D Animation
Major-Practical

Unit No.	Title of Unit and Contents
1	Animate the classic Bouncing ball
2	Straight Walk cycle
3	Animating Squirrel Hop
4	Full Body Walkcycle and Runcycle
5	Action Animation
6	Dialogue Animation with Lip sync
7	Combining multiple actions with NLA Editor
8	Industrial/ Product Animation

	ANI-312-Practical in open source I	
	Major-Practical	
	Number of Credits: 02	
	Number of Hours : 60	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Recall 3D Concepts for Production	6
CO2	Discuss & Differentiate various tools used for 3d modeling in Blender	5
CO3	Execute modeling and texturing techniques for blender	4
CO4	Analyze different lighting conditions and apply them in your scene	3
CO5	Try different conditions for modelling, lighting and rigging.	5
CO6	Create a complete scene using modelling, texturing and lighting tools.	1

ANI-312-Practical in open source I
Major-Practical

Unit No.	Title of Unit and Contents
1	Create low poly isometric room with lighting and material.
2	Modelling Prop
3	Modelling a Stylised Character
4	Shaders – 1
5	Shaders -2
6	Lighting Interior Scene
7	Lighting Environment
8	Rigging a car
9	Rigging Human Character

Learning Resources References:

Sr.No	References
1	"Blender for Dummies" by Jason van Gumster
2	"Blender 3D: Noob to Pro" (Free online book)
3	"The Blender Bible" by Jason van Gumster
4	Python Crash Course, 2nd Edition: A Hands-On, Project-Based Introduction to Programming
5	Blender Guru (Andrew Price) Website: BlenderGuru.com
4	Free tutorials, especially well-known for the " <i>Donut Tutorial</i> " which teaches Blender basics
6	Udemy: Blender 3D: Your First 3D Animation A beginner course that covers everything from modeling to animating in Blender.
7	CG Cookie Website: CG Cookie Blender Tutorials
8	A paid platform offering professional Blender courses and training for various skill levels.

	ANI-331-Web Design VSC-Theory	
	Number of Credits: 02 Number of Hours : 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Identify various web technology and application development issues and trends.	6
CO2	Illustrate the difference between server-side and client-side web technologies.	5
CO3	Apply CSS with its types and use them with HTML to provide the styles to the web pages at various levels.	4
CO4	Analyze different components and technologies of World Wide Web as a platform.	3
CO5	Test different web form fields using JavaScript.	5
CO6	Integrate the concepts to design and develop websites using elements and scripting.	1

**ANI-331-Web Design
(VSC-Theory)**

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction 1.1 The Internet: Web clients, Web servers 1.2 Concept of WWW 1.3 Basic Internet protocols 1.4 Client Server Architecture – Two-Tier, Multi-Tier, 1.5 HTTP Request and Response, URL 1.6 Features of Web	3
2	HTML5 2.1 Structuring an HTML Document - Elements and Attributes, Tags, The DOCTYPE Element 2.2 Creating and Saving an HTML Document, 2.3 Understanding Elements 2.4 Working with Text 2.5 Defining the DIV Element and SPAN Element 2.6 Working with Links The target Attribute, The id Attribute 2.7 Creating Tables 2.8 Working with Images, Colors 2.9 Working with Forms 2.10 Working with Multimedia	5
3	CSS 3.1 Evolution, Syntax 3.2 CSS Selectors, Inserting CSS in an HTML Document 3.3 Backgrounds and Color Gradients in CSS 3.4 Font Properties 3.5 Creating Boxes and Columns Using CSS 3.6 Displaying, Positioning, and Floating an Element 3.7 Effects, Frames and Controls in CSS	7
4	JavaScript	5

	4.1 Introduction to JavaScript 4.2 JavaScript Basics –Data Types, Control Structure 4.3 JavaScript Functions 4.4 Working with events 4.5 JS popup boxes 4.6 JavaScript Objects 4.7 JavaScript HTML DOM 4.8 Form Validation	
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Learning Resources References:

Sr. No	References
1	Steven Holzner, HTML 5 Black Book, Coriolis, 2000, Second Edition
2	P.J. Deitel & H.M. Deitel, Internet & World Wide Web How to Program, Pearson –Prentice Hall, Fourth Edition
3	David Flanagan, Javascript- The definitive Guide, O'Reilley Publication, Fifth Edition
4	Jeffrey C. Jackson, Web Technologies : A Computer Science Perspective, Pearson Education
E- Resources	1. https://www.w3schools.com/html/ 2. https://www.w3schools.com/css 3. https://www.w3schools.com/js/

ANI-332-Practical in Web Design VSC-Practical		
	Number of Credits: 02 Number of Hours : 60	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Recall 3D Concepts for Production	6
CO2	Discuss & Differentiate various tools used for 3d modeling in Blender	5
CO3	Execute modeling and texturing techniques for blender	4
CO4	Analyze different lighting conditions and apply them in your scene	3
CO5	Try different conditions for modelling, lighting and rigging.	5
CO6	Create a complete scene using modelling, texturing and lighting tools.	1

**ANI-332-Practical in Web Design
VSC-Practical**

Unit No.	Title of Unit and Contents
1	HTML List
2	HTML Link
3	HTML Table
4	HTML Form -1
5	HTML Form – 2
6	CSS Properties – 1
7	CSS Properties – 2
8	CSS Properties – 3
9	CSS Animations
10	Javascript Popup Boxes, head and body tag scripting
11	Javascript Functions
12	Javascript Array
13	Javascript Date Object
14	Javascript String functions
15	Form validations with Javascript

	BVM-325-Media Ethics & Cyber Security Minor-Theory	
	Number of Credits: 02 Number of Hours : 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Define Intellectual Property Rights.	6
CO2	Discuss process of registration of Intellectual Property	5
CO3	Demonstrate terms related to computer networks.	4
CO4	Explain information security and its principles.	5
CO5	Appraise security threats.	2
CO6	Specify security management.	1

BVM-325-Media Ethics & Cyber Security
Minor-Theory

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction to Intellectual Property Rights 1.1 Introduction to IPR 1.2 Need of Intellectual Property Protection 1.3. Introduction to Patents & Copyright 1.4 History of IPR 1.5 Trade and Investment	[04]
2	Introduction to Copyright, Software and Internet 2.1 Introduction 2.2 Copyright as a Stimulus to Creation 2.3 Copyright and Computer Software	[02]
3	The Patent System 3.1 Scope of Patentability 3.2 Exceptions to Patent Rights 3.3 Patenting in India 3.4 Process of Patenting in India	[03]
4	Overview of Networking Concepts 4.1 Basics of Communication Systems 4.2 Transmission Media 4.3 Network Topologies 4.4 Network Types 4.5 ISO / OSI and TCP / IP Protocol Stacks 4.6 Internetworking	[05]
5	Basics of Information Security 5.1 Overview of Information Security 5.2 Information Security Services 5.3 Types of Attacks 5.4 Goals for Security 5.5 E-commerce Security 5.6 Computer Forensics	[05]
6	Security Threats and Vulnerabilities 6.1 Overview of Security threats 6.2 Hacking Techniques 6.3 Password Cracking 6.4 Insecure Network connections 6.5 Malicious Code	[07]

	6.6 Programming Bugs 6.7 Cybercrime and Cyber terrorism 6.8 Information Warfare and Surveillance	
7	Security Management 7.1 Security Management Practices - 7.2 Security Laws and Standards 7.3 Access Control and Intrusion Detection 7.4 Server Management and Firewalls 7.5 Security in Multimedia Network 7.6 System and Application Security	[06]
8	Cases of Security Systems 8.1 Cases of Security Systems in e-Banking 8.2 Cases of Security Systems in e-Commerce 8.3 Cases of Security Systems in e-business 8.4 Cases of Security Systems in ICT devices in Business	[04]

Learning Resources References:

Sr.No	References
	Book-1 - Laws Relating to Intellectual Property by Dr. B. L. Wadehra, Fourth Edition, Universal Law Publishing Co.
	Book-2 - Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives by Sunit Belpure and Nina Godbole, Wiley India Pvt. Ltd.
	Book-3 - Information Systems Security: Security Management, Metrics, Framework and Best Practices by Nina Godbole, Wiley India Pvt. Ltd.
	Book-4 - Network Security Essentials, Applications and Standards By William Stallings, Pearson Education.
	Additional References:
	• Introduction to Computer Security, Matt Bishop, Pearson Education • Information Security: Principles and Practices, Pearson Education • Principles of Information Security Fourth Edition by Michael Whitman, Herbert J. Mattord, Cengage Learning • Intellectual Property Rights by M. M. Karki, Atlantic Publication (2009) • Intellectual Property Rights in India: General Issues and Implications by Prankrishna Pal, Regal Publications • Intellectual Property Issues and Cyberspace, The Indian Perspective, by Rohas Nagpal, Published 2009, Asian School of Cyber Laws
	Important Links: 1. https://en.wikipedia.org/wiki/Watermark 2. https://www.cl.cam.ac.uk/teaching/0910/R08/work/essay-ma485-watermarking.pdf 3. http://www.ijaiem.org/volume3issue2/IJAIEM-2014-02-27-062.pdf 4. https://en.wikipedia.org/wiki/Steganograph

	BVA-325-IPR & Cyber Security Minor-Theory	
	Number of Credits: 02 Number of Hours : 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Define Intellectual Property Rights.	6
CO2	Discuss process of registration of Intellectual Property	5
CO3	Demonstrate terms related to computer networks.	4
CO4	Explain information security and its principles.	5
CO5	Appraise security threats.	2
CO6	Specify security management.	1

BVA-325-IPR & Cyber Security**(Minor-Theory)**

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction to Intellectual Property Rights 1.1 Introduction to IPR 1.2 Need of Intellectual Property Protection 1.3. Introduction to Patents & Copyright 1.4 History of IPR 1.5 Trade and Investment	[04]
2	Introduction to Copyright, Software and Internet 2.1 Introduction 2.2 Copyright as a Stimulus To Creation 2.3 Copyright and Computer Software	[02]
3	The Patent System 3.1 Scope of Patentability 3.2 Exceptions to Patent Rights 3.3 Patenting in India 3.4 Process of Patenting in India	[03]
4	Overview of Networking Concepts 4.1 Basics of Communication Systems 4.2 Transmission Media 4.3 Network Topologies 4.4 Network Types 4.5 ISO / OSI and TCP / IP Protocol Stacks 4.6 Internetworking	[05]
5	Basics of Information Security 5.1 Overview of Information Security 5.2 Information Security Services 5.3 Types of Attacks 5.4 Goals for Security 5.5 E-commerce Security 5.6 Computer Forensics	[05]
6	Security Threats and Vulnerabilities 6.1 Overview of Security threats 6.2 Hacking Techniques 6.3 Password Cracking 6.4 Insecure Network connections	[07]

	6.5 Malicious Code 6.6 Programming Bugs 6.7 Cybercrime and Cyber terrorism 6.8 Information Warfare and Surveillance	
7	Security Management 7.1 Security Management Practices - 7.2 Security Laws and Standards 7.3 Access Control and Intrusion Detection 7.4 Server Management and Firewalls 7.5 Security in Multimedia Network 7.6 System and Application Security	[06]
8	Cases of Security Systems 8.1 Cases of Security Systems in e-Banking 8.2 Cases of Security Systems in e-Commerce 8.3 Cases of Security Systems in e-business 8.4 Cases of Security Systems in ICT devices in Business	[04]

Learning Resources References:

Sr.No	References
	Book-1 - Laws Relating to Intellectual Property by Dr. B. L. Wadehra, Fourth Edition, Universal Law Publishing Co.
	Book-2 - Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives by Sunit Belpure and Nina Godbole, Wiley India Pvt. Ltd
	Book-3 - Information Systems Security: Security Management, Metrics, Framework and Best Practices by Nina Godbole, Wiley India Pvt. Ltd.
	Book-4 - Network Security Essentials, Applications and Standards By William Stallings, Pearson Education.
	Additional References • Introduction to Computer Security, Matt Bishop, Pearson Education • Information Security: Principles and Practices, Pearson Education • Principles of Information Security Fourth Edition by Michael Whitman, Herbert J. Mattord, Cengage Learning • Intellectual Property Rights by M. M. Karki, Atlantic Publication (2009) • Intellectual Property Rights in India: General Issues and Implications by Prankrishna Pal, Regal Publications • Intellectual Property Issues and Cyberspace, The Indian Perspective, by Rohas Nagpal, Published 2009, Asian School of Cyber Laws
	Important Links: • https://en.wikipedia.org/wiki/Watermark • https://www.cl.cam.ac.uk/teaching/0910/R08/work/essay-ma485-watermarking.pdf • http://www.ijaiem.org/volume3issue2/IJAIEM-2014-02-27-062.pdf • https://en.wikipedia.org/wiki/Steganograph

	ANI-345-Field Project FP	
	Number of Credits: 02 Number Of Hours : 60	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Recall pre-production concepts	6
CO2	Articulate for the individual project	
CO3	Carry out research for the projects	4
CO4	Break down process for the respective pipelines	
CO5	Review individual pre-production process	2
CO6	Build pre-production document	1

**ANI-345-Field Project
FP**

Unit No.	Title of Unit and Contents
	Guidelines for Project
1	Animation Project Guideline - Two Students in One group for group project. - Pre-Production work should include story, script, story board, concept art, character bible, props design & background design etc. Hard copy of pre-production should be submitted before starting actual production work in Semester V. - There should be a Originality in Concept & Content. - Duration of project minimum 2 minutes. - Project should be a core Animation project including VFX & Compositing with Audio Effect. - Project may not contain unnecessary violence, obscenity, nudity or racially disparaging material. - Project may not contain trademarks, logos or trade dress owned by others without their permission; or any commercial content that promotes any product or service. - Project should not promote smoking or drinking habits in any forms. - Project may not content copyrighted material owned by others including photographs, sculptures, paintings and other works of arts or images published on internet. - Project should not promote any political activity.

T.Y. B.Sc. Semester VI		
	ANI-351-Python Major-Theory	
	Number of Credits: 02 Number of Hours : 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Define the syntax for python programming.	6
CO2	Discuss data types and operators	5
CO3	Demonstrate control structure	4
CO4	Explain types of functions	5
CO5	Determine different operation on array	2
CO6	Compose various program	1

**ANI-351-Python
Major-Theory**

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction 1.1 What is python 1.2 What python can do 1.3 Why python 1.4 Python and other language 1.5 syntax 1.6 comments	4
2	Python getting started 2.1 Python variable 2.2 Python data type 2.3 List 2.4 Tuples 2.5 Set 2.3 Operators	6
3	Control Structure 3.1 if-else 3.2 while loop 3.3 for loop	10
4	Functions 4.1 Built-in 4.2 User defined	6
5	Arrays 5.1 What is an array 5.2 Array length 5.3 Looping array elements 5.4 Different operations on array 5.5 Array Methods	8
6	Animation and scripting	2

Learning Resources References:

Sr.No	References
1	Introduction to Python Programming: Gowrishankar S , Veena A
2	Python Crash Course, 2nd Edition: A Hands-On, Project-Based Introduction to Programming

ANI-352-Open Source 3D Techniques II Major-Theory		
Number of Credits: 02 Number of Hours : 30		
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Define the syntax for python programming.	6
CO2	Discuss data types and operators	5
CO3	Demonstrate control structure	4
CO4	Explain types of functions	5
CO5	Determine different operation on array	2
CO6	Compose various program	1

**ANI-352-Open Source 3D Techniques II
(Major-Theory)**

Unit No.	Title of Unit and Contents	No. of Lectures
1	Workflow of Animation in Blender 1.1 Animation Worklow 1.2 Character Animation Editor 1.3 Body Dynamics 1.4 Acting 1.5 Working with Graph editor and Dopesheet 1.6 NLA Editor	6
2	Particle System 2.1 What are Particle System 2.2 Types of Particle system 2.3 Particle system Physics 2.4 Dynamics 2.5 Emitter 2.6 Hair System	6
3	Physics Simulation 3.1 Introduction to Simualation 3.2 Understanding Physics in Simulation 3.3 Rigid bodies and Soft bodies 3.4 Fluid and its types 3.5 Volumetrics in simulation 3.6 Particle system for simulation 3.7 Dynamic Paint	5
4	Cameras 4.1 Adding Camera	7

	4.2 Camera Properties 4.3 Camera Animation 4.4 Working with multiple cameras 4.5 Markes and binding 4.6 Depth of Filed 4.7 Motion Blur	
5	Rendering and Passes 5.1 Introduction to the Eevee Render Engine 5.2 Introduction to Cycles Render Engine 5.3 Sampling 5.4 Render Properties 5.5 Render Passes 5.6 Post processing	7

Learning Resources References:

Sr.No	References
1	"Blender for Dummies" by Jason van Gumster
2	"Blender 3D: Noob to Pro" (Free online book)
3	"The Blender Bible" by Jason van Gumster
4	Python Crash Course, 2nd Edition: A Hands-On, Project-Based Introduction to Programming E-Resources
	Important Links: Blender Guru (Andrew Price) Website: BlenderGuru.com - Free tutorials, especially well-known for the "<i>Donut Tutorial</i>" which teaches Blender basics. Udemy: Blender 3D: Your First 3D Animation A beginner course that covers everything from modeling to animating in Blender. CG Cookie Website: CG Cookie Blender Tutorials - A paid platform offering professional Blender courses and training for various skill levels.

	ANI-353-Creative Writing (Major-Theory)	
	Number of Credits: 02 Number of Hours : 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Define creative writing skills for Animated films.	6
CO2	Explain Basic literary concepts.	5
CO3	Apply writing theory for animation writing.	4
CO4	Analyze reader Response, Theory Editing & Proofreading.	3
CO5	Review Sources of Creativity from given books.	2
CO6	Write a creative script for creating animated films.	1

**ANI-353-Creative Writing
(Major-Theory)**

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction Creative Thinking Techniques of Creative Thinking Creative Writing Power of Ideas and Writing Understanding the Target Audience	9
2	Tools of Writing Accuracy, Brevity and Clarity Cohesion and Coherence in Paragraph Writing Figures of Speech Types of Writing	8
3	Literary Aspects: Subjectivity and Objectivity Theme Story and Plot Characters and Character Development Point of View Fiction Genre Dialogues	7
4	Analysis Reader Response Theory Editing for structured writing Proofreading	4
5	Sources of Creativity: 'The Happy Prince' by Oscar Wilde 'The Eyes Have It' by Ruskin Bond 'The Tell-Tale Heart' by E.A. Poe	5
6	Application of creative writing: Online Blogs Literary Magazine Advertisements	3

	ANI-354-VFX II Elective A-Theory	
	Number of Credits: 02 Number of Hours : 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Identify and overview of visual effects Industry	6
CO2	Compositing Fundamentals the process of combining visual elements	
CO3	Key concepts Understanding Nodes Working with 2D and 3D concepts.	5
CO4	Advanced Techniques Tracking and match moving process.	
CO5	Rendering and Final Output, Industry Practices & Workflow Understanding pipeline management and integration.	5
CO6	Project Work and Portfolio Development.	

Unit No.	Title of Unit and Contents	No. of Lectures
1	Matte Painting and Digital Environment 1. Introduction to digital matte painting techniques. 2. Creating realistic backgrounds and environments using Photoshop and other tools. 3. Techniques for integrating matte paintings into live-action footage.	6
2	Advanced Compositing Techniques 1. Advanced compositing concepts (color correction, tracking, and advanced rotoscoping). 2. Integrating visual effects into complex live-action shots. 3. Using VFX to enhance narrative storytelling.	8
3	Rendering and Final Output 1. Preparing renders for compositing: AOVs (Arbitrary Output Variables) 2. Optimizing renders for compositing workflows 3. Outputting for different mediums: Film, TV, VR, and game engines 4. Exporting final composites (render passes, channels, EXR workflow)	8
4	Final Project – Pre-production & Production Planning 1. Pre-production: Scripting, storyboarding, and shot planning for a VFX sequence. 2. Preparing assets and organizing a VFX pipeline for a final project. 3. Reviewing concepts and techniques learned throughout the course.	8

Learning Resources References:

Sr.No	References
1	Welcome to the Nuke Online Help
2	The foundry Education: Each chapter in this section explains in detail a key feature of Nuke. You can use the section to familiarize yourself with the features you are particularly interested in, or to get answers to specific problems that arise during compositing. For information on the features in NukeX and Nuke Studio, see Advanced Compositing with NukeX and Nuke Studio or Timeline Editing in Nuke Studio
3	Welcome to the Nuke Online Help

ANI-355-Practical in VFX II Elective A-Practical		
	Number of Credits: 02 Number of Hours : 60	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Identify and overview of visual effects Industry	6
CO2	Compositing Fundamentals the process of combining visual elements	1
CO3	Key concepts Understanding Nodes Working with 2D and 3D concepts.	5
CO4	Advanced Techniques Tracking and match moving process.	
CO5	Rendering and Final Output, Industry Practices & Workflow Understanding pipeline management and integration.	5
CO6	Project Work and Portfolio Development.	

ANI-355-Practical in VFX II
(Elective A-Practical)

Unit No.	Title of Practical
1	1. Digital Matte Painting: Creating large-scale, photorealistic environments, often used for background scenes. 2. 2D/3D Projection Mapping: Projecting a 2D painting or image onto 3D geometry to create immersive environments. Assignment: Create a matte painting and integrate it into a shot.
2	3. Color Correction: Adjusting the color balance of a shot to match different elements or create a specific look. 4. Look Development: Creating a signature color style for a film or scene (e.g., a vintage look, futuristic tone). Assignment: Composite a complex scene that requires multiple layers of VFX
3	5. Collaboration with other departments (CG, Modeling, Lighting, etc.) Assignment: Develop a pre-production package for your final VFX project (including a Shot list, storyboards, and assets).
4	6. Constructing a demo reel showcasing key compositing skills Assignment: Present your final VFX project (a short sequence) showcasing all learned Techniques.

Learning Resources References:

Sr.No	References
1	Welcome to the Nuke Online Help
2	The foundry Education: Each chapter in this section explains in detail a key feature of Nuke. You can use the section to familiarize yourself with the features you are particularly interested in, or to get answers to specific problems that arise during compositing. For information on the features in NukeX and Nuke Studio, see Advanced Compositing with NukeX and Nuke Studio or Timeline Editing in Nuke Studio
3	Welcome to the Nuke Online Help

ANI-356-Game Production Elective B-Theory		
	Number of Credits: 02 Number of Hours : 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Understanding Game industry and its pipeline.	5
CO2	Understand Systems Thinking to understand our world and existing games to transfer those experiences into your own game.	5
CO3	Execute the Design Thinking method to improve your design process	4
CO4	Analyze different components and technologies of World Wide Web as a platform.	3
CO5	Test different web form fields using JavaScript.	5
CO6	Integrate the concepts to design and develop level design and board game.	1

ANI-356-Game Production
Elective B-Theory

Unit No.	Title of Unit and Contents	No. of Lectures
1	Introduction to Unity 1.1 Unity Basics 1.2 Unity Layout 1.3 Hierarchy and Inspector 1.4 Animator 1.5 Package Manager 1.6 Render Pipelines	3
2	Project Management 2.1 Importing Geometry 2.2 Importing Textures 2.3 Game Objects 2.4 Sprite Editor 2.5 Game Manager 2.4 Level Design	5
3	Materials, Shaders and Lights 3.1 Materials in Unity 3.2 PBR Workflow 3.3 Lights 3.4 Lightmap Baking 3.5 Physics Material 3.6 Volumetrics	7
4	Physics and Animation 4.1 Colliders and Triggers 4.2 Navmesh 4.3 Ragdoll 4.4 Animation workflow 4.5 Animation Blend Tree 4.6 Animator	5

5	Prototyping and Programming 5.1 Basic Programming with visual scripting 5.2 Variables 5.3 Events and Custom Events 5.4 Visual Scripting Groups and Superunits 5.5 Visual Scripting return Events 5.6 Game Testing	6
6	Game Building 6.1 Scene Management 6.2 Player Setting 6.3 Splash Screens 6.4 Loading Scenes 6.5 Icons 6.6 Versions 6.7 Publishing	4

Learning Resources References:

Sr. No	References
1	The Art of Game Design: A Book of Lenses - Jesse Schell. Publisher: CRC Press (12 th September 2008). ISBN-10: 0123694965 ISBN-13: 978-0123694966.
2	Game Mechanics: Advanced Game Design (Voices That Matter), Ernest Adams (Author), Joris Dormans (Author). Publisher: New Riders; 1 edition (15 th June 2012). ISBN-10: 0321820274 ISBN-13: 978-0321820273.
3	Game Coding Complete, Fourth Edition Paperback Mike McShaffry (Author), David Graham (Author). Publisher: Cengage Learning PTR; 4 edition (March 5 th , 2012) ISBN-10: 1133776574 ISBN-13: 978-1133776574.
4	Game Development Essentials: Game Story & Character Development Paperback Marianne Krawczyk (Author), Jeannie Novak (Author). Publisher: Cengage Learning; 1 edition (March 23 rd , 2006). ISBN-10: 1401878857 ISBN-13: 978-1401878856.

ANI-357-Practical in Game Production Elective B-Practical		
	Number of Credits: 02 Number of Hours : 60	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Recall Game design thinking process	6
CO2	Understand Systems Thinking to understand our world and existing games to transfer those experiences into your own game.	5
CO3	Execute the Design Thinking method to improve your design process	4
CO4	Analyze different lighting conditions and apply them in your scene	3
CO5	Try different conditions for modelling, lighting and rigging.	5
CO6	Create game ready animation loops and optimized 3D model.	1

ANI-357-Practical in Game Production
Elective B-Practical

Unit No.	Title of Unit and Contents
1	Creating Pong game 1. Importing assets and Setting up scene 2. Physics and Rigid body in Unity 3. Introduction to Visual Scripting 4. Creating Levels & Menu 5. Creating game builds for target platforms
2	Creating first 2D Platformer game 1. Working with sprite sheet 2. Animating 2D sprites 3. Working with Animation states 4. Introduction to FX 5. Creating Ingame UI 6. Adding Sounds 7. Building games for different platforms
3	Creating 3D FPS/TPS game 1. Importing modular kits in 3D 2. Character controller 3. Animation branches 4. Inventory Management 5. Interactive UI 6. Scene Management
4	Creating Environment in 3D 1. Working with Terrains 2. Introduction to Particle system 3. Lighting Environment 4. LODs 5. Volumetric 6. Camera

ANI-361-Sound for Animation Major-Practical		
	Number of Credits: 02 Number of Hours: 60	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Identify key types of sound in animation (dialogue, sound effects, music) and their roles.	6
CO2	Explain how sound design affects the mood and atmosphere of an animated scene.	• 5
CO3	Apply basic sound editing techniques, like syncing dialogue and adding sound effects.	4
CO4	Analyze an animated clip to assess how sound enhances the narrative.	3
CO5	Evaluate the effectiveness of sound in supporting character and story development.	2
CO6	Create an original sound design for an animated scene to enhance mood and impact.	1

**ANI-361-Sound for Animation
(Major-Practical)**

Unit No.	Title of Unit and Contents
1	Introduction to Audio in Animation - Importance of sound in animation - Key components: Dialogue, sound effects (SFX), music, and ambiance - How audio enhances storytelling and emotional impact
2	Basics of Sound Design - Understanding frequency, amplitude, and timbre - Mono vs. stereo vs. surround sound - Common tools and software for sound design
3	Voice Acting and Dialogue Recording - Casting the right voice actors - Recording techniques and equipment - Synchronizing dialogue with lip movements (lip-syncing) - Cleaning and enhancing voice recordings
4	Sound Effects (SFX) Creation - Foley vs. digital sound effects - Recording and editing custom sound effects - Layering and processing for realism
5	Music in Animation - Role of background music in animation - Choosing the right music style and mood - Working with composers vs. using stock music
6	Ambience - Creating immersive environments with background sounds - Using reverb, delay, and EQ for depth
7	Audio Editing and Mixing - Synchronizing sound with visuals - Balancing dialogue, SFX, and music - Common mixing techniques (compression, equalization, reverb)

	Avoiding common audio mistakes
8	Sound for Different Animation Styles - Case studies: How sound varies across animation genres - Adapting sound for different audiences (cartoons vs. adult animation)
9	Software & Tools - Overview of industry-standard DAWs (Pro Tools,) - Plugins for sound design and enhancement
10	Finalizing & Exporting Audio - Industry audio standards and formats - Optimizing audio for different platforms (TV, film, web) - Quality control and final review
11	Practical Projects & Case Studies - Breakdown of audio from famous animations - Hands-on project: Designing audio for an animated short - Feedback and improvement techniques

ANI-362-Practical in open source II Major-Practical		
	Number of Credits: 02 Number of Hours: 60	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Recall Animation workflow and Principles.	6
CO2	Discuss & Differentiate various types of physics simulation in 3D	5
CO3	Execute Simulation techniques in 3D	4
CO4	Analyze different lighting conditions and apply them in your scene	3
CO5	Try different types of physics simulations with particle effects.	5
CO6	Create a complete scene with simulation and appropriate lighting.	1

ANI-362-Practical in open source II**(Major-Practical)**

Unit No.	Title of Unit and Contents
1	Animate Human Walkcycle OR Runcycle
2	Animate a car with cinematics
3	Create particle hairs or fur for the character
4	Create Environment and decorate it with Particle system and volumetrics
5	Rigid body Simulation
6	Fluid Simulation
7	Fire and Smoke Simulation
8	Create a short product animation video of 60-120 seconds.
9	Using emitter create a Particle effects in 3D

ANI-382-Animation Project VSC-Practical		
	Number of Credits: 02 Number of Hours: 60	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Recall pre-production concepts	6
CO2	Articulate for the individual project	5
CO3	Carry out research for the projects	4
CO4	Break down process for the respective pipelines	3
CO5	Review individual pre-production process	2
CO6	Build pre-production document	1

**ANI-382-Animation Project
(VSC-Practical)**

Unit No.	Title of Unit and Contents
	Guidelines for Project
1	B) Animation Project Guideline - Two Students in One group for group project. - Pre-Production work should include story, script, story board, concept art, character bible, props design & background design etc. Hard copy of pre-production should be submitted before starting actual production work in Semester V. - There should be a Originality in Concept & Content. - Duration of project minimum 2 minutes. - Project should be a core Animation project including Animation, VFX & Compositing with Audio Effect. - Project may not contain unnecessary violence, obscenity, nudity or racially disparaging material. - Project may not contain trademarks, logos or trade dress owned by others without their permission; or any commercial content that promotes any product or service. - Project should not promote smoking or drinking habits in any forms. - Project may not content copyrighted material owned by others including photographs, sculptures, paintings and other works of arts or images published on internet. - Project should not promote any political activity.

	BVM-375-Portfolio Minor-Theory	
	Number of Credits: 02 Number of Hours: 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Recall pre-production concepts	6
CO2	Articulate for the individual project	5
CO3	Carry out research for the projects	4
CO4	Break down process for the respective pipelines	3
CO5	Review individual pre-production process	2
CO6	Build pre-production document	1

**BVM-375-Portfolio
Minor-Theory**

Unit No.	Title of Unit and Contents	No of Lectures
1	Introduction to Portfolio Creation • Purpose: Understand the role and importance of a portfolio. • Key Points: Target audience, portfolio types (digital vs. physical), goals (showcase skills, creativity).	2
2	Portfolio Structure • Sections: ○ Cover Page: Name, contact, tagline. ○ Intro: Brief bio and animation style. ○ Work Samples: ▪ Demo Reel: 1-2 minutes, showcasing best work. ▪ Project Breakdown: Describe the project, role, tools, and challenges. ▪ Character/Environment Designs: Show character poses, background concepts. ▪ Process: Storyboards, sketches, and animatics. ○ Skills: Highlight software (e.g., Maya, Toon Boom) and techniques (2D, 3D, Stop Motion).	6
3	Demo Reel Creation • Objective: Compile your best animation clips into a concise, engaging reel (1-2 minutes). • Key Points: Show variety (2D/3D, character animation, backgrounds), storytelling, and good pacing.	5
4	Showcasing Your Best Work • Objective: Present work with clear descriptions and context. Include final animations, sketches, and behind-the-scenes materials.	5
5	Technical Skills • Objective: Highlight proficiency in animation software and techniques. • Key Points: Show tools like Maya, After Effects, Toon Boom; demonstrate core animation principles (timing, weight, fluidity).	4
6	Online Portfolio (or PDF) • Objective: Create a professional digital or physical portfolio.	4

	• Key Points: Build a clean, easy-to-navigate website (or PDF); keep file sizes manageable; ensure high-quality visuals.	
7	Feedback and Refinement • Objective: Improve your portfolio with peer/mentor feedback. • Key Points: Iterate and polish based on reviews.	2
8	Tailoring for Jobs or Freelance • Objective: Customize your portfolio for specific roles (character animator, storyboard artist). • Key Points: Highlight relevant work for job applications and freelance opportunities.	2

BVA-375-Portfolio Minor-Theory		
	Number of Credits: 02 Number of Hours: 30	
Course Outcomes (COs) On completion of the course, the students will be able to:		Bloom's Cognitive Levels
CO1	Recall pre-production concepts	6
CO2	Articulate for the individual project	5
CO3	Carry out research for the projects	4
CO4	Break down process for the respective pipelines	3
CO5	Review individual pre-production process	2
CO6	Build pre-production document	1

**BVA-375-Portfolio
(Minor-Theory)**

Unit No.	Title of Unit and Contents	No of Lectures
1	Introduction to Portfolio Creation • Purpose: Understand the role and importance of a portfolio. • Key Points: Target audience, portfolio types (digital vs. physical), goals (showcase skills, creativity).	2
2	Portfolio Structure • Sections: ○ Cover Page: Name, contact, tagline. ○ Intro: Brief bio and animation style. ○ Work Samples: ▪ Demo Reel: 1-2 minutes, showcasing best work. ▪ Project Breakdown: Describe the project, role, tools, and challenges. ▪ Character/Environment Designs: Show character poses, background concepts. ▪ Process: Storyboards, sketches, and animatics. ○ Skills: Highlight software (e.g., Maya, Toon Boom) and techniques (2D, 3D, Stop Motion).	6
3	Demo Reel Creation • Objective: Compile your best animation clips into a concise, engaging reel (1-2 minutes). • Key Points: Show variety (2D/3D, character animation, backgrounds), storytelling, and good pacing.	5
4	Showcasing Your Best Work • Objective: Present work with clear descriptions and context. Include final animations, sketches, and behind-the-scenes materials.	5
5	Technical Skills • Objective: Highlight proficiency in animation software and techniques. • Key Points: Show tools like Maya, After Effects, Toon Boom; demonstrate core animation principles (timing, weight, fluidity).	4
6	Online Portfolio (or PDF) • Objective: Create a professional digital or physical portfolio.	4

	• Key Points: Build a clean, easy-to-navigate website (or PDF); keep file sizes manageable; ensure high-quality visuals.	
7	Feedback and Refinement • Objective: Improve your portfolio with peer/mentor feedback. • Key Points: Iterate and polish based on reviews.	2
8	Tailoring for Jobs or Freelance • Objective: Customize your portfolio for specific roles (character animator, storyboard artist). • Key Points: Highlight relevant work for job applications and freelance opportunities.	2

	ANI-395-Internship OJT	
	Number of Credits: 04	

Unit No.	Title of Unit and Contents
	Guidelines for Project
1	- Students must select any of the Studio / Company / Industry / Start ups related to Animation industry strictly. - They have to complete minimum 144 working hours in that company - Industrial Training 01 = 72hrs - Industrial training 02 = 72hrs - Total = 144hrs - Students have to write daily tasks while they are on Industrial training. - They have to maintain generals for the same - They have to submit in detail report of the total duration spent for industrial training