Specialization Path 02 – 3D Film Production (12 Weeks)

Program Objective

To develop advanced skills in 3D character animation, performance, and production workflows, enabling learners to create high-quality, industry-ready animated film sequences with strong acting, realism, and storytelling.

Week 01 – Foundations of 3D Animation & Workflow

Topics Covered:

- 3D animation pipeline overview
- Animation principles in 3D space
- Keyframe animation vs procedural workflows
- Graph editor fundamentals
- Blocking techniques (pose-to-pose)

Learning Outcome:

- Understand the complete 3D animation workflow
- Apply animation principles effectively in a 3D environment
- Create structured blocking for animation sequences

Week 02 – Character Setup & Rigging Fundamentals

Topics Covered:

- Anatomy of a character rig
- Controllers, constraints, and hierarchies
- IK/FK systems and switching
- Rig usability for animators
- Basic rig troubleshooting

Learning Outcome:

- Understand how character rigs function
- Efficiently use rig controls for animation
- Identify and resolve common rigging issues during animation

Week 03 – Character Posing & Appeal

Topics Covered:

- Principles of strong posing
- Line of action and silhouette clarity
- Weight distribution and balance
- Gesture drawing translated to 3D

- Creating appealing and readable poses

Learning Outcome:

- Create clear, expressive, and appealing poses
- Communicate character intent through posture
- Improve visual readability of animation frames

Week 04 – Body Mechanics (Part 1)

Topics Covered:

- Physics of motion (mass, gravity, momentum)
- Walk cycles and run cycles
- Weight shifts and balance
- Timing and spacing in movement
- Reference-based animation

Learning Outcome:

- Animate realistic human locomotion
- Apply physics principles to character movement
- Demonstrate control over timing and weight

Week 05 – Body Mechanics (Part 2 – Advanced Actions)

Topics Covered:

- Jumping, lifting, pushing, pulling
- Interaction with props
- Force and impact simulation
- Overlapping action and follow-through
- Polishing motion

Learning Outcome:

- Animate complex physical actions with realism
- Integrate characters with objects and environments
- Refine animations for fluidity and believability

Week 06 – Acting for Animation (Performance Basics)

Topics Covered:

- Acting principles for animators
- Emotional beats and timing
- Facial expressions and body language

- Subtext and character motivation
- Performance planning (thumbnails & video reference)

Learning Outcome:

- Translate emotions into physical performance
- Plan and execute acting-based animation
- Create believable and engaging character behavior

Week 07 – Acting-Based Animation (Advanced Performance)

Topics Covered:

- Nuanced acting and subtle movements
- Eye direction and focus
- Micro-expressions and gestures
- Stylization vs realism
- Scene-based performance development

Learning Outcome:

- Deliver nuanced and emotionally rich performances
- Use subtle animation to enhance storytelling
- Develop character depth through performance

Week 08 – Dialogue Animation (Lip Sync & Facial Animation)

Topics Covered:

- Lip-sync techniques (phonemes & visemes)
- Facial rig controls
- Syncing dialogue with emotion
- Timing dialogue with body acting
- Audio analysis for animation

Learning Outcome:

- Create accurate and expressive lip-sync animation
- Integrate facial animation with body performance
- Deliver convincing dialogue-driven scenes

Week 09 – Advanced Dialogue & Interaction Scenes

Topics Covered:

- Multi-character dialogue scenes
- Interaction and timing between characters

- Eye contact and conversational realism

- Staging for dialogue scenes

- Continuity and shot consistency

Learning Outcome:

- Animate engaging multi-character interactions

- Maintain timing and continuity across shots

- Build believable conversational performances

Week 10 – Four-Legged (Quadruped) Animation

Topics Covered:

- Anatomy of quadrupeds

- Walk, trot, gallop cycles

- Weight distribution in animals

- Stylization vs realism in creature animation

- Creature acting basics

Learning Outcome:

- Animate realistic and stylized quadruped motion

- Understand differences between human and animal locomotion

- Create believable animal performances

Week 11 – Shot Production & Polishing

Topics Covered:

- Shot workflow (blocking → splining → polishing)

- Graph editor refinement

- Secondary animation and details

- Cloth, hair, and subtle motion

- Final quality checks

Learning Outcome:

- Refine animation shots to production quality

- Enhance realism through secondary details

- Deliver polished, industry-standard animation

Final Deliverables

- Body Mechanics Animation Shots
- Acting & Dialogue Performance Shots

- Quadruped Animation Sequence
- Polished Animation Clips (Showreel Ready)
- **Final 3D Film Sequence / Capstone Project**