MODULE ANIMATION - 19 ECTS
BACHELOR FALLTERM

Animation Fundamentals 1

3 ECTS

Course Content: Basic 3D concepts, project setup, hierarchies, layers, instances, copies, deformers (FFD, non-linear, blendshapes), constraints, basic rigging, driven keys, fundamentals of expressions & scripts, principles of animation, animation editors.

Learning Outcomes:

- o Set up a 3D project professionally.
- o Create simple rigs.
- o Create simple expressions/scripts.
- o Understand object hierarchies and the applications of constraints.
- o Understand the differences, properties, and applications of deformers.
- o Produce a computer animation while adhering to technical requirements.

Animation Production 1

3 ECTS

Course Content: Conceptualization and planning of animation projects, director's interpretation, story-boards, previz, briefing, quotation, invoicing, budgeting, etc.

Learning Outcomes:

- o Write a director's interpretation and create a rough storyboard.
- o Plan and create a previz in 3D.
- o Calculate labor costs (self-employed, employed).
- o Plan and budget a project.
- o Create a professional quotation.
- o Understand the importance of professional pre-production.

Character 1 – Concept Art & Modeling

3 ECTS

Course Content: Concept art, character design, moods, anatomy, character modeling, sculpting, topology, character stylization.

Learning Outcomes:

- o Create a mood board.
- o Design a stylized 3D character.
- o Model and texture a stylized 3D character.
- o Understand workflow differences between sculpting and box modeling.
- o Understand the importance of clean topology and can create clean topology.
- o Understand baking object information into textures.

Dynamics

2 ECTS

Course Content: Particle systems, emitters, force fields, cloth simulation, rigid body simulation, soft body simulation, particle instancing, particle rendering, particle expressions, collisions, goals.

Learning Outcomes:

- o Create a complex particle system.
- o Create simple particle expressions.
- o Render particles.
- o Add dynamic effects to an existing scene.
- o Independently apply learned techniques in a project.
- o Understand the differences, properties, and applications of force fields.
- o Understand the difference between creation and runtime expressions.

Interactive Authoring 2

3 ECTS

Course Content: Game art, real-time asset production, procedural texture systems, node-based authoring.

Learning Outcomes:

- o Create realistic procedural textures.
- o Create stylized procedural textures.
- o Use procedural textures in game engines.
- o Create a technically clean game asset and export it.
- o Further edit assets in engines.
- o Independently apply learned techniques in a project.
- o Understand the difference between real-time and VFX/animation assets.

Guest Lecture 1 - Animation

1 ECTS

Course Content: Visiting lecturers from the creative industry present current examples of emerging trends and technologies in the form of guest lectures or workshops.

Learning Outcomes:

- o Students gain a deep insight into the latest trends and technological developments.
- o The acquired skills can be applied by students in their projects.

English Study Group 1 – Computer Animation

1 ECTS

Course Content: The focus of the English Study Group is on expanding proficiency in spoken English. Discussing and presenting Course Content from the selected specialization enhances language skills (including phrasing, emphasis, presentation techniques). Grammar and vocabulary are improved through targeted exercises and text analyses. Intercultural aspects of the desired professional field are reflected upon (including international resume).

Learning Outcomes:

- o Students can discuss and argue theoretical and practical topics in English.

- o   They can present Course Content and projects adequately in English.
- o   Students possess descriptive vocabulary and scientific terminology.

Rendering & VFX 1

3 ECTS

Course Content:

- o   Layer-based Compositing
- o   Technical fundamentals of video material
- o   Rotoscoping
- o   Keying
- o   Tracking
- o   Linear Workflow
- o   VFX Onset Basics
- o   Photorealistic Rendering
- o   PBR-Workflow (Physically Based Rendering)
- o   Lighting
- o   Shader Creation
- o   Image composition and layout
- o   Look Development

Learning Outcomes:

- o   Students will be able to plan a simple VFX shot.
- o   They can independently solve basic VFX tasks.
- o   They can render a photorealistic scene image.
- o   Understanding different types of lights and their applications.
- o   Understanding technical quality criteria of video data.
- o   Understanding shaders and material properties.
- o   They can apply the principles of image composition in their own work.