

## 3D Character Animation 2021

15<sup>th</sup> February to 11<sup>th</sup> June 2021, at The Animation Workshop, VIA University College

### Course program

<b>Week 1</b>	15 <sup>th</sup> to 19 <sup>th</sup> February	Introduction to Maya
<b>Week 2</b>	22 <sup>nd</sup> to 26 <sup>th</sup> February	Introduction to Maya
<b>Week 3</b>	1 <sup>st</sup> to 5 <sup>th</sup> March	Rigging
<b>Week 4</b>	8 <sup>th</sup> to 12 <sup>th</sup> March	3D Animation Basic
<b>Week 5</b>	15 <sup>th</sup> to 19 <sup>th</sup> March	3D Animation Basics
<b>Week 6</b>	22 <sup>nd</sup> to 26 <sup>th</sup> March	3D Animation Basics
<b>Week 7</b>	29 <sup>th</sup> to 31 <sup>st</sup> March	3D Animation Basics
<b>Week 7</b>	1 <sup>st</sup> to 5 <sup>th</sup> April	Easter holiday
<b>Week 8</b>	6 <sup>th</sup> to 7 <sup>th</sup> April	3D Animation Basics
<b>Week 8</b>	8 <sup>th</sup> to 9 <sup>th</sup> April	Acting workshop 1
<b>Week 9</b>	12 <sup>th</sup> to 16 <sup>th</sup> April	3D Animation Advanced – Acting
<b>Week 10</b>	19 <sup>th</sup> to 23 <sup>rd</sup> April	3D Animation Advanced – Acting
<b>Week 11</b>	26 <sup>th</sup> to 30 <sup>th</sup> April	3D Animation Advanced – Dialogue
<b>Week 12</b>	3 <sup>rd</sup> to 7 <sup>th</sup> May	3D Animation Advanced – Dialogue
<b>Week 13</b>	10 <sup>th</sup> & 13 <sup>th</sup> to 14 <sup>th</sup> May	Final project preparation
<b>Week 13</b>	11 <sup>th</sup> to 12 <sup>th</sup> May	Acting workshop 2
<b>Week 14</b>	17 <sup>th</sup> to 21 <sup>st</sup> May	Final Project: a 20-30 second animation short film
<b>Week 15</b>	24 <sup>th</sup> to 28 <sup>th</sup> May	Final Project
<b>Week 16</b>	31 <sup>st</sup> May to 4 <sup>th</sup> June	Final Project
<b>Week 17</b>	7 <sup>th</sup> to 11 <sup>th</sup> June	Final Project

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VIA University College

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## 3DCA 2021 detailed program

### Summary

The 3DCA course takes participants through a series of lectures, assignments and mini-productions of increasing complexity in the field of 3D character animation, from concept to polish. Under the supervision of guest teachers, all active animation professionals, the participants are introduced to the Maya modelling and animation software and to 3D character animation through a series of exercises designed to transfer the classical 2D animation principles onto a 3D platform. Focus will lie on the basic animation principles, body mechanics and physical action during basic training and then move on to the advanced concepts of pantomime acting and dialogue animation. The course culminates in a 4,5-week final project, each student's showreel masterpiece; a 20-30 seconds animation.

### Modules

#### **Introduction to Maya – 2 weeks**

Teacher: Henrik Malmgren, SE. AV Generalist, CEO and founder of Good Job Studios.

The goal of the module is for the course participants to be introduced to and get familiar with the Maya user interface, basic settings, functions and tools, and go through the steps of the CG pipeline. The topic is intro to modelling *for animators*. Participants are introduced to simple polygon modelling and will learn how to create simple models using reference images, and texture, light, shade and render them out. Exercise example: Participants will model an exterior and an interior environment. Being an animation course, the modelling and texturing exercises are meant to give the participants an understanding of working in 3d space, and the software and the possibilities. The goal is NOT to have the participants model a character for animation, since they will be working with already modelled and rigged characters in the following weeks.

#### **Rigging – 1 week**

Teacher: Kasper Larsson, DK. Head of Studio, Senior Technical & Generalist Artist at Mrs Wordsmith.

The one week of rigging is designed as an intro to rigging *for animators*, so participants learn the terminology, know how to afterwards communicate with a rigger, and know how a rig is constructed. Participants are not trained to be riggers specifically. Exercise example: Model and rig a ball character with legs and feet. The exercise is scalable to include arms and hands depending on each participant's level and speed.

#### **3D Animation Basics – 4 weeks**

Teacher: Erik Schmidt, DK. Animation Supervisor at Sun Creature. Erik has worked for companies such as Ghost VFX, Warner Brothers, Walt Disney Animation Studios, and DreamWorks Animation. *Black Panther* (2018), *Legends of Chima* (TV series, 2014), *Otto the Rhino* (2013), *Bolt* (2008), *Shark Tale* (2004), *The Road to Eldorado* (2000).

The goal of the 4-week module is to familiarize participants with the Maya animation interface and work methods in a 3D animation software, while studying and applying the basic principles of animation through simple exercises. The teacher will take the



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participants through a long range of basic exercises during the 4 weeks, from bouncing balls, music exercises, to walk cycles, weight shift, and weight lift exercises designed to give participants as much hands-on animation experience as possible. At the end of the module, participants will have already created a lot of short animations in 3D, and should be more at ease with the technical side of 3D animation and Maya.

### **Easter holiday – 5 days**

From 1<sup>st</sup> to 5<sup>th</sup> April. Please note that the 3D Animation Basics continues and finishes after the Easter holiday. No training activities are planned. However, participants have full access to classroom facilities during the break.

### **Acting Workshop I – 2 days**

Teacher: Robert Bennett, USA. Acting teacher, director for animated films (Les Gobelins, The Animation Workshop, VIA UC, EMCA etc.)

This practical workshop is closely linked to the following Acting module. Before this workshop, participants are presented with an assignment to be completed during the 2-week Acting module. This assignment will be the starting point for the workshop. The content of the workshop will be warm up exercises, how to act for animation, getting comfortable acting for animation reference, getting (more) comfortable recording yourself, exploring the movements and acting of your characters, and developing your characters. The goal is for participants to create a unique character with a solid background story and characteristics. What will motivate the character to do what she does? How will the character react to what happens? A strong character will make it easier to come up with interesting ideas for the shots. Finally, participants shoot reference of themselves to use for the following module.

### **3D Animation Advanced – Acting – 2 weeks**

Teacher: Anders Brogaard, DK. Animator at DNEG, London. Anders has worked for companies such as DNEG, A-Film, Bacon, Unity Technologies, and Illumination Mac Guff. Credits include *Ainbo* (2021) *Checkered Ninja 2* (2021), *The Secret Life of Pets* (2016), *Ronald the Barbarian* (2011).

The goal with the 2-week Acting module is for the participants to apply what they have learned during the basic weeks in a short shot. The participants focus on personality and originality in their characters. Attention is on the character's body gestures. The module is structured as a mini production, where the participants choose from 5 different scenarios without dialogue to solve a given assignment. Under the guidance of the teacher, participants then analyze, plan, block, spline and polish an animated shot in 3D with a biped character. The scenarios, props and character to be used will be provided, so the participants can focus on the animation. At the end of the module, participants will have finished a short (5-12 seconds) physical acting shot.

### **3D Animation Advanced – Dialogue – 2 weeks**

Teacher: Anders Brogaard, DK. Animator at DNEG, London. Anders has worked for companies such as DNEG, A-Film, Bacon, Unity Technologies, and Illumination Mac Guff. Credits include *Ainbo* (2021) *Checkered Ninja 2* (2021), *The Secret Life of Pets* (2016), *Ronald the Barbarian* (2011).

The 2-week Dialogue module is also a mini production, and similar in structure to the preceding Acting module. The goal for the participants is to learn and get hands-on experience doing facial animation, lip-sync, eyes, eye-darts, blinks etc. The steps are: Choose a short piece of dialogue (5 seconds), analyze, plan, shoot reference, block, animate and polish the animation



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under the guidance of the teacher. Focus is on lip-sync and facial animation, through a medium shot from the waist up. The teacher will bring a choice of 5 short pieces of dialogue for the participants to choose from. Alternatively, participants find 2-3 audio clips and the teacher helps select the most suited audio. The goal at the end of the module is for each participant to have a finished, short dialogue shot, with one character speaking. If there are two, one should be off-screen.

### **Final Project Preparation – 3 days**

Teacher: Self-study

The first 3 days of this week are dedicated to the preparation of the final projects. Participants will develop and polish their idea, plan their shots, do a quick thumbnail storyboard, sketch some “golden poses”, and in general recharge their batteries for the final stretch of the course.

### **Acting Workshop II – 2 days**

Teacher: Robert Bennett, USA. Acting teacher, director for animated films (Les Gobelins, The Animation Workshop, VIA UC, EMCA etc.)

Participants are expected to have some ideas for their final projects, short clips, between 15-20 seconds, with some gag or action. For this second acting workshop, participants will develop and hone the acting for their final projects, and shoot reference clips of themselves. The goal is to push the development of the participants’ characters. The better an animator knows his/her character, the easier it is for the animator to animate her. If participants have a sound clip already, they are asked to bring it for the workshop.

### **Final Project – 4 weeks**

Teacher: Fredrick Fassé, CAN. Animation Director at Doberman Pictures. LEGO Jurassic World: The Secret Exhibit (2018) Beat Bugs (TV Series, 2016), Ratchet & Clank (2016), Escape from Planet Earth (2013), Dead Rising 2 (video game, 2010).

Teaching assistant: Julie Astrup, DK. 3D animator at Copenhagen Bombay Productions.

Teacher for CG assistance during the final week: Henrik Malmgren, SE. AV Generalist, CEO and founder of Good Job Studios.

The four final project weeks are another mini-production during which participants produce a 15-20 second shot. There are no scenarios to choose from, the participants will have to come up with an idea themselves. The module is a continuation of the previous modules, so participants can choose to focus on a dialogue piece again or concentrate on more physical, pantomime acting.

The participants should get the story out of the way as quickly as possible, and then plan and begin to block the animation. Participants are encouraged to limit the story and keep it very simple, so they can spend as much time animating and polishing as possible. The clips need to be short without a grand story. A short visual gag works much better. Keep it simple, keep it short! At the end of the module, participants should gain an understanding of the importance of polish and learn different techniques to polish in 3D animation. The course ends with a presentation for the school, where each participant presents her final project (could also be a group project).



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## **OPTIONAL: Trip to The Annecy International Animation Film Festival**

Festival dates: 14<sup>th</sup> to 19<sup>th</sup> June 2021.

The 3DCA course includes a bus trip (Viborg - Annecy - Viborg) and student accreditation to The Annecy International Animation Film Festival. More info is available from the course organizer.

## **3DCA Learning Objectives**

The learning objectives described below cover the whole program. Naturally, some of the knowledge, skills and competences apply more to certain modules than others. The lists under each category start with the fundamental goals and expands on that.

### **Knowledge:**

Participants should acquire knowledge of:

- basic animation principles applied in 3d animation
- various animation workflows relevant for 3d animation
- the various 3d animation phases: planning, blocking, splining and polishing
- how physicality translates into animation
- the Cartesian coordinate system
- the basic operations an animator performs on a 3D object
- the basic components of the 3D animation software Autodesk Maya
- how objects made of different materials move
- how to work with the graph editor
- the difference of working with forward (FK) and inverse kinematics (IK)
- how constraining and parenting interaction with a prop can add character specific traits and plus the characters performance
- how to create and use video reference
- how to effectively tell a story without dialogue using clear silhouette, personality traits and intention
- the basics of modelling and rigging
- cinematography: staging and posing
- acting and character specific traits
- different animation styles
- working with monologue/dialogue and lip-sync in 3d animation
- the basic phonetic mouth shapes for vowels and consonants
- the muscular-skeletal structure of the face
- techniques to polish in 3d animation

### **Skills:**

Participants should acquire the skills to:

- model simple assets for an environment
- model and rig a very simple character using for rigging
- make objects made of different materials move in a 3D space
- analyze, plan, block, spline and polish an animated shot in 3D with a biped character
- implement the 12 animation principles into a 3D animated scene
- set up constraints and explore the difference between parenting and constraining
- use the graph editor efficiently



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- switch between inverse kinematics (IK) and forward kinematics (FK)
- analyze and apply the relevant 3d animation workflow method
- apply and explore basic physicality and acting principles relevant for 3d animation
- analyze their work in relation to the applied theory and practice of 3d animation
- analyze video reference material, observe from life and/or act out the intended character's performance themselves
- analyze, apply and explore physicality principles relevant for 3d animation in order to portray the intended movement of characters
- analyze, apply and explore acting principles relevant for 3d animation in order to portray an emotion/attitude of the character
- understand the character's inner thoughts and how to portray this through the staging, posing, and acting of the scene.
- use Inverse Kinematics or Forward Kinematics for a bi-pedal character's arms when appropriate
- analyze an audio clip in order to animate the dialogue
- to analyze dialogue for accent, rhythm, and emotional phrasing
- utilize a proper work flow for dialogue animation
- animate a 3D scene with a character's speech
- make clear gestures and timing
- break down an action into its sub-parts
- polish 3D animation adding secondary actions and nuance

### **Competences:**

Participants should develop competence to:

- develop and carry out an idea for the animation scene following the necessary animation stages
- use interaction with a prop to add character specific traits and plus the characters performance
- create a convincing character with clear gesture and attitude
- effectively tell a story without dialogue
- give and receive constructive critic
- develop their workflow to be organized and efficient
- portray a character's movement and acting taking animation style into consideration
- develop an idea for the animation scene in accordance with the assignment, analyzing the quality and ambition level vs. available time and resources
- animate shots including dialogue



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## **Format of teaching**

We do not have any teachers on staff at The Animation Workshop, VIA UC. Instead, we bring in professional artists from studios to teach for a limited number of weeks. In general, the teacher will do lectures/demos in the mornings followed by exercises and project work in the afternoons. Hands-on sessions are accompanied by 1-on-1 feedback or dailies and weeklies with the whole group. The classroom is set up with a computer for each of the (up to) 16 participants, and a teacher computer hooked up to a projector, making it easy to switch between demos/lectures and hands-on work.

## **Course instructional method**

- Lectures, demonstrations, walk-throughs, hands-on work, workflow talks, exercises, with critique and advice.
- Dailies, weeklies and assignment presentations.
- All modules will include lectures and extensive hands-on experience. The specific exercises listed above are examples and are subject to change. All rigs are provided for the exercises.

## **Class hours**

Normal class hours are 9:00 to 16:00, but evening/weekend homework must be expected.



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