

Postgraduate Certificate

Advanced Deformation Systems,
Rigging of Props and Apparel



Postgraduate Certificate

Advanced Deformation Systems, Rigging of Props and Apparel

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Global University**
- » Credits: **6 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: www.techtute.com/us/videogame/postgraduate-certificate/deformation-systems-advanced-rigging-props-apparel

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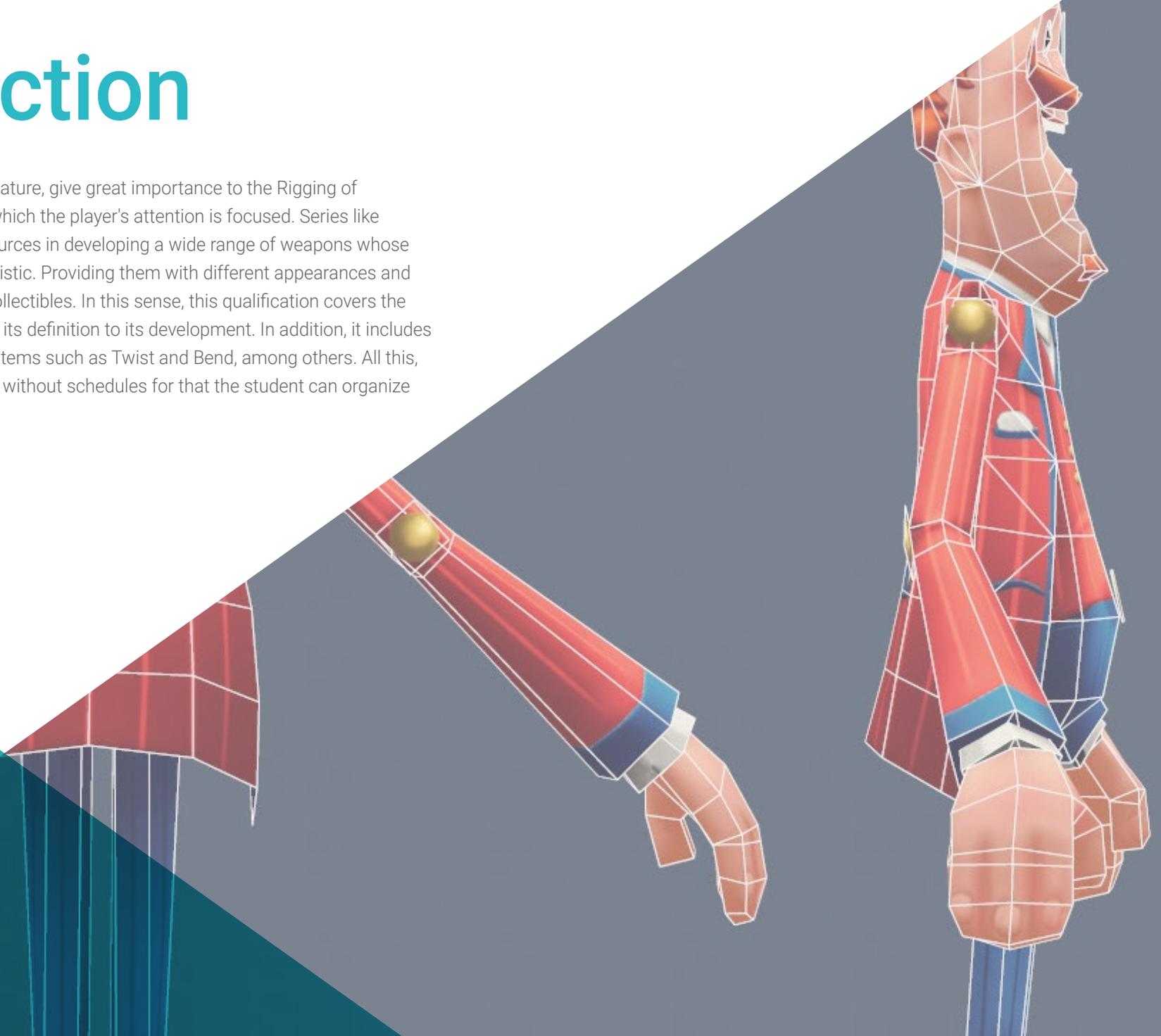
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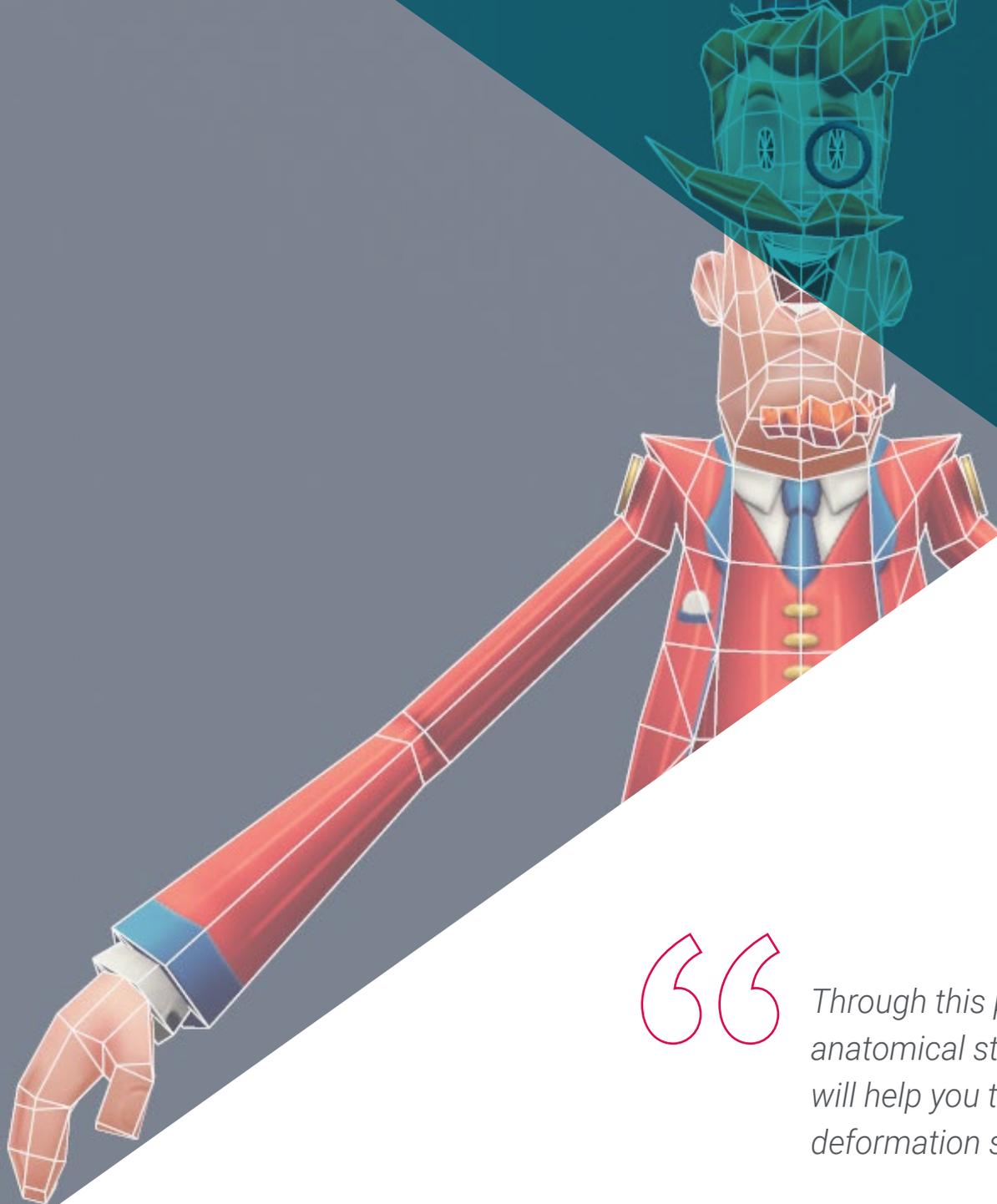
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01

Introduction

First person video games, by their nature, give great importance to the Rigging of Props. These are the elements on which the player's attention is focused. Series like Call of Duty concentrate many resources in developing a wide range of weapons whose appearance and movement are realistic. Providing them with different appearances and even marketing them as in-game collectibles. In this sense, this qualification covers the Rigging of Props and clothing, from its definition to its development. In addition, it includes different advanced deformation systems such as Twist and Bend, among others. All this, in a completely online modality and without schedules for that the student can organize according to his times.





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Through this program you will perform anatomical studies of limb torsion that will help you to implement advanced deformation systems such as Twist"

Sometimes, the production of a film or video game requires extremely specific body deformation. For example, in a cartoon, the character may be required to stretch or shrink its limbs, as well as flex them as if they were made of rubber to give them some emphasis. On the other hand, in a realistic work the torsions may have to be more natural.

To carry out these movements very specific systems are used, known as Bend, Twist and Stretch & Squash. The program of this Postgraduate Certificate has defined each of them and contemplates the different tools and processes involved in their development.

On the other hand, we will delve into two elements that also have a lot to do with the movement of the character. The clothes, where the preparation will take place of geometry and the projection of influences; and the Props, providing their definition and developing a system.

Finally, a specific topic has been reserved to deal with arc rigging, together with its study of deformation, approach and development. And another for the application of low-performance proxies to advanced deformation systems.

These contents will be taught through an online methodology and without timetables, so that students can organize themselves according to their own time. Furthermore, the syllabus has been designed with different formats, meaning the student can choose the one which best adapts to their circumstances.

This **Postgraduate Certificate in Advanced Deformation Systems, Rigging of Props and Apparel** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ The development of practical case presented by experts in Props and Clothing Systems
- ◆ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where self-assessment can be used to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



Learn from TECH the best tricks to develop stretch & squash systems, highly demanded in animation productions"

“

Thanks to our program, you will learn how to create and orient Joints chains within a within a Twist system"

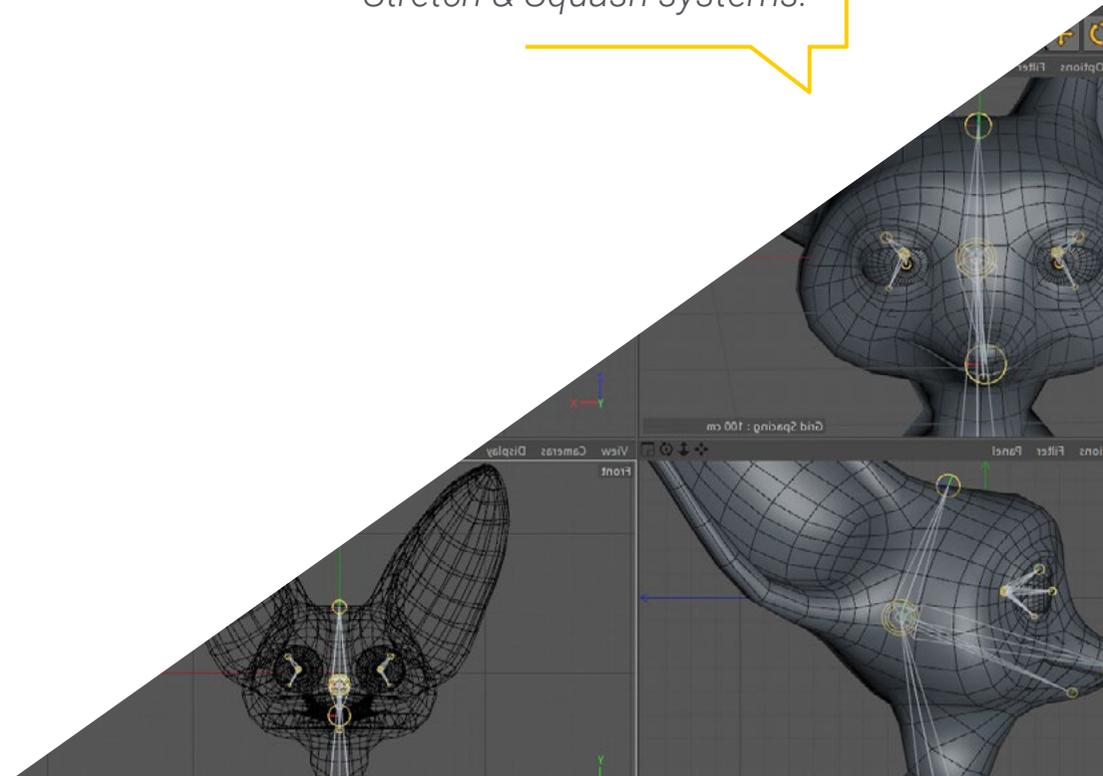
The program includes, in its teaching staff, professionals from the sector who bring to this program the experience of their work, in addition to recognized specialists from prestigious reference societies and universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

At TECH, you will learn the keys to elaborate curves and Clusters in your Bend systems and make them plausible.

The faculty of this Postgraduate Certificate will teach you how to use the RemapValue node applied to Stretch & Squash systems.



02

Objectives

Graduates of the Postgraduate Certificate in Advanced Deformation Systems, Rigging of Props and Apparel will have obtained all the keys to apply advanced deformations to their characters. And not only realistic deformations, but of whichever kind the production requires. Therefore, they will know how to perfectly implement Twist, Bend and Stretch & Squash. In addition, they will have learned the peculiarities of Rigging for Props, clothing and bow rigging; as well as the application of Proxy to advanced deformation systems.





“

Graduates of this Postgraduate Certificate will be able to develop realistic weapons, one of the most demanded Props in the video game industry"

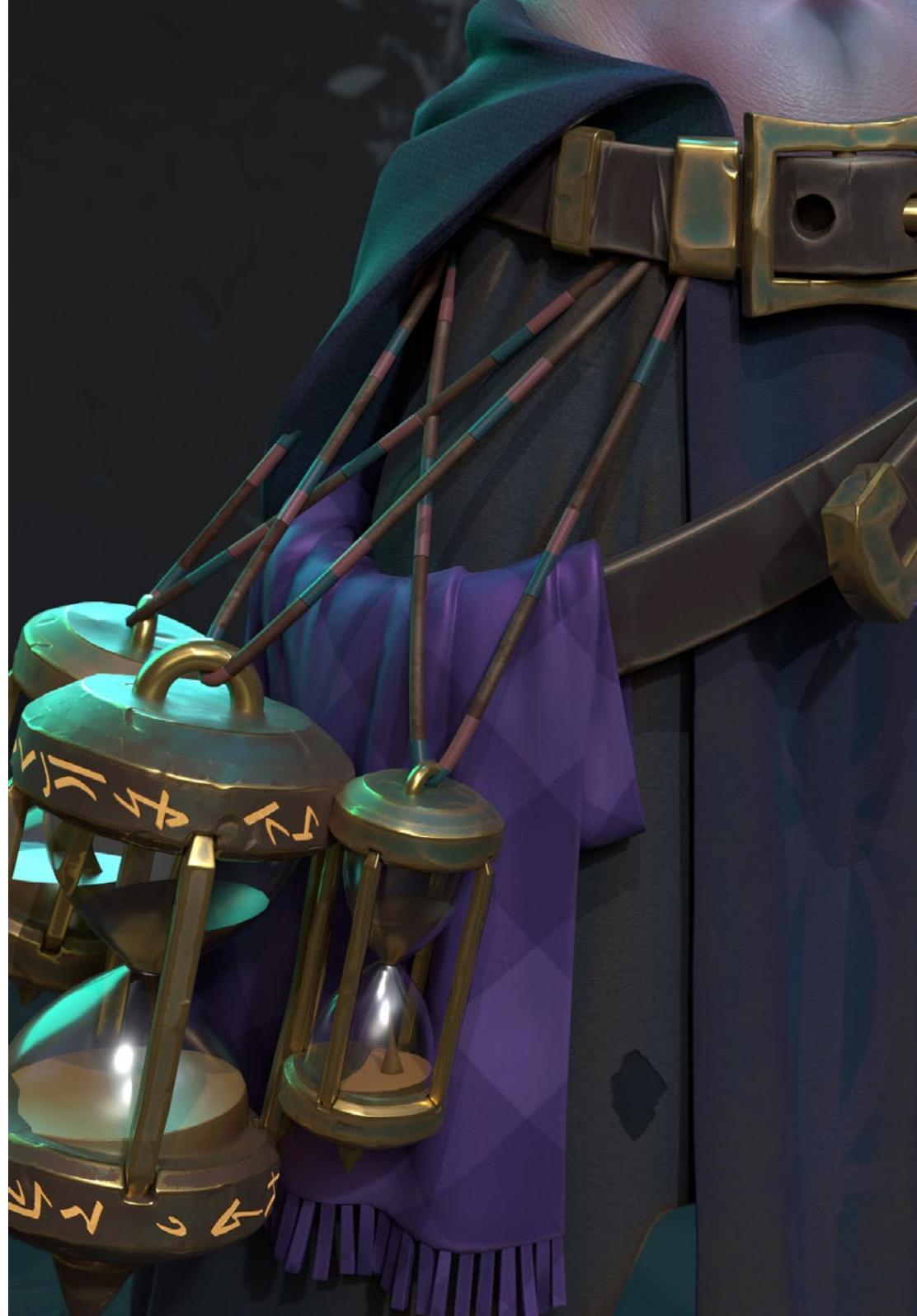


General Objectives

- ◆ Acquire advanced rigging techniques for 3D characters
- ◆ Learn how to use the latest software
- ◆ Analyze 3D models for rigging purposes
- ◆ Propose systems and mechanisms of the character adjusted to the nature of the production
- ◆ Provide the tools and specialized skills to tackle rigging jobs in film or video games



This program contemplates the most demanded advanced deformation systems in film productions"





Specific Objectives

- ◆ Develop a Twist-type torsion system
- ◆ Develop a Stretch & Squash type limb stretching and shrinking system
- ◆ Develop a Bendy-like flexible limb system for cartoons
- ◆ Conceive software optimization constraints with computationally heavy Rigs
- ◆ Specialized approach to a low-performance proxy system
- ◆ Design a Rig system for the character's clothing and apparel
- ◆ Propose a Rig system for the character's weapon mechanics

03

Course Management

This Postgraduate Certificate has been developed taking into account the practical applications of the contents included. Therefore, we have selected a faculty with experience in real with experience in real projects. We will be able to solve any doubt that may arise about advanced deformation systems or Rigging of Props, clothes and bow.



“

TECH teachers are professionals in the working environment who will provide answers, for example, to the most specific doubts regarding the movement of Props”

International Guest Director

Jessica Bzonek is a leading designer and creator of 3D characters, with more than ten years of experience in the video game industry that have established her as an influential professional in the international scene. In fact, her career has been characterized by her commitment to innovation and collaboration, fundamental aspects in her work, where technology and art are creatively intertwined. She has contributed to the realization of important animation projects, including “Avatar: Frontiers of Pandora” and “The Division 2: Year 4”, which has consolidated her reputation as an expert in the creation of pipelines and rigging.

She has also held the position of Associate Technical Director of Cinematics at Ubisoft Toronto, where she has been essential in the production of high-quality cinematic sequences. Here, she has been particularly noted for her participation as a co-presenter at the 2024 Ubisoft Developers Conference, a testament to her leadership in the industry. She has also played a crucial role at Stellar Creative Lab, where she co-developed a custom automated system for character rigs. In this regard, her ability to manage the communication of issues and solutions between departments has been instrumental in optimizing workflows.

Jessica Bzonek’s career has also included significant work at DHX Media, where she has worked closely with supervisors and other pipeline workers to solve problems and test new tools, organizing learning sessions that have promoted team cohesion. At Rainmaker Entertainment Inc. he has developed character and element rigs, using a modular rigging system that has improved the functionality of the production process. Finally, her work as a Junior Rigging Artist, at Bardel Entertainment, has allowed her to develop scripts to optimize the workflow.



Ms. Bzonek, Jessica

- Associate Technical Director of Cinematics at Ubisoft, Toronto, Canada
- Technical Director of Pipeline / Rigging at Stellar Creative Lab
- Pipeline Technical Director at DHX Media
- Character Pipeline Technical Director at DHX Media
- Creature Pipeline Technical Director at Rainmaker Entertainment Inc.
- Junior Rigging Artist at Bardel Entertainment
- Course in 3D Animation and Visual Effects at the Vancouver Film School
- Course in Advanced Character Rigging by Gnomon
- Course in Introduction to Python by UBC - Continuing Education
- B.A. in Multimedia and History from McMaster University

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Thanks to TECH, you will be able to learn with the best professionals in the world”

Management



Mr. Guerrero Cobos, Alberto

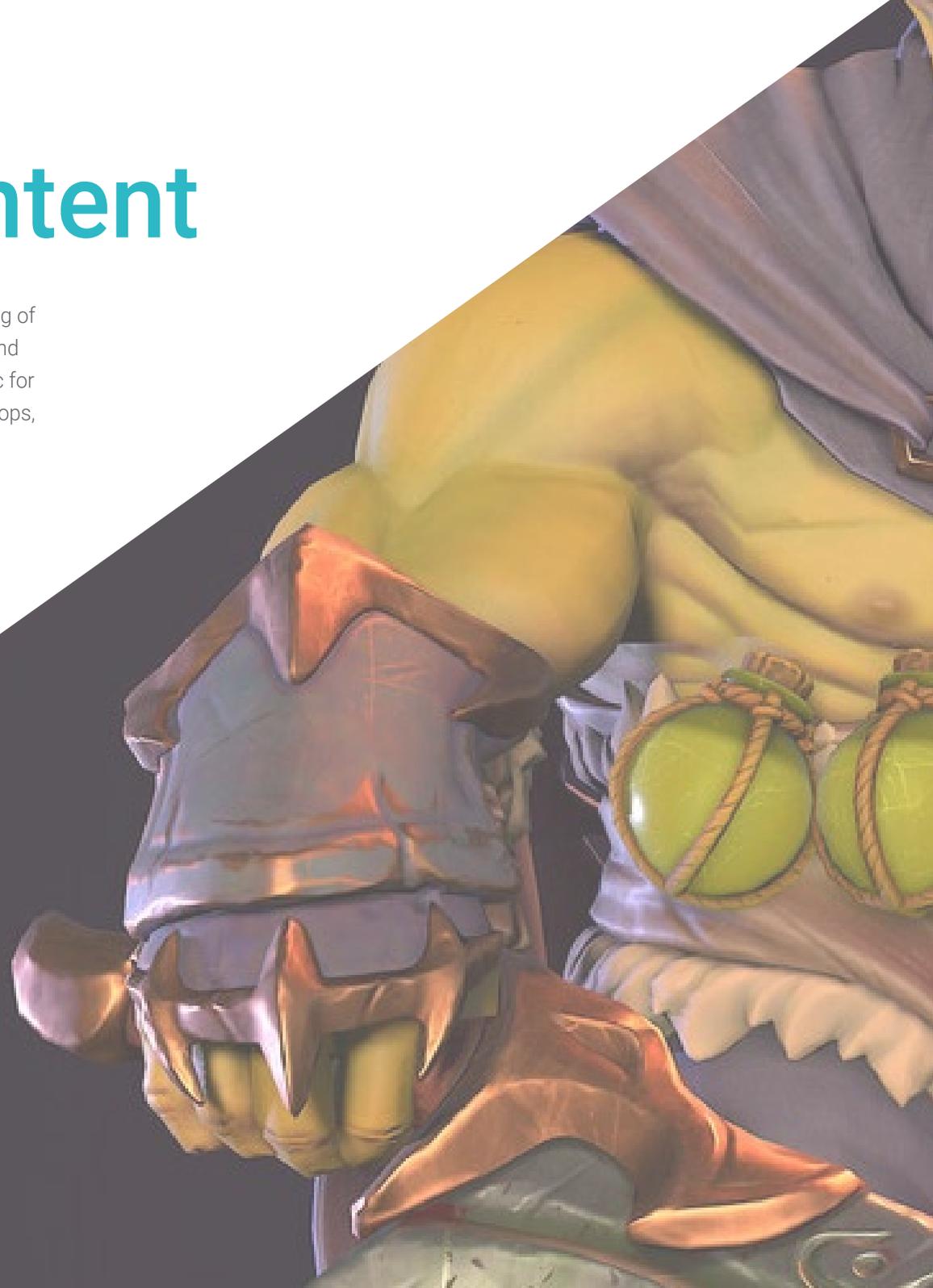
- Rigger and animator Video Games videogame Vestigion Lovem Games
- Master of Art and Production in Animation by the University of South Wales
- Master in 3D Character Modeling at ANIMUM
- Master in 3D Character Animation for Film and Video Games by ANIMUM
- Degree in Multimedia and Graphic Design at the University School of Design and Technology (ESNE)

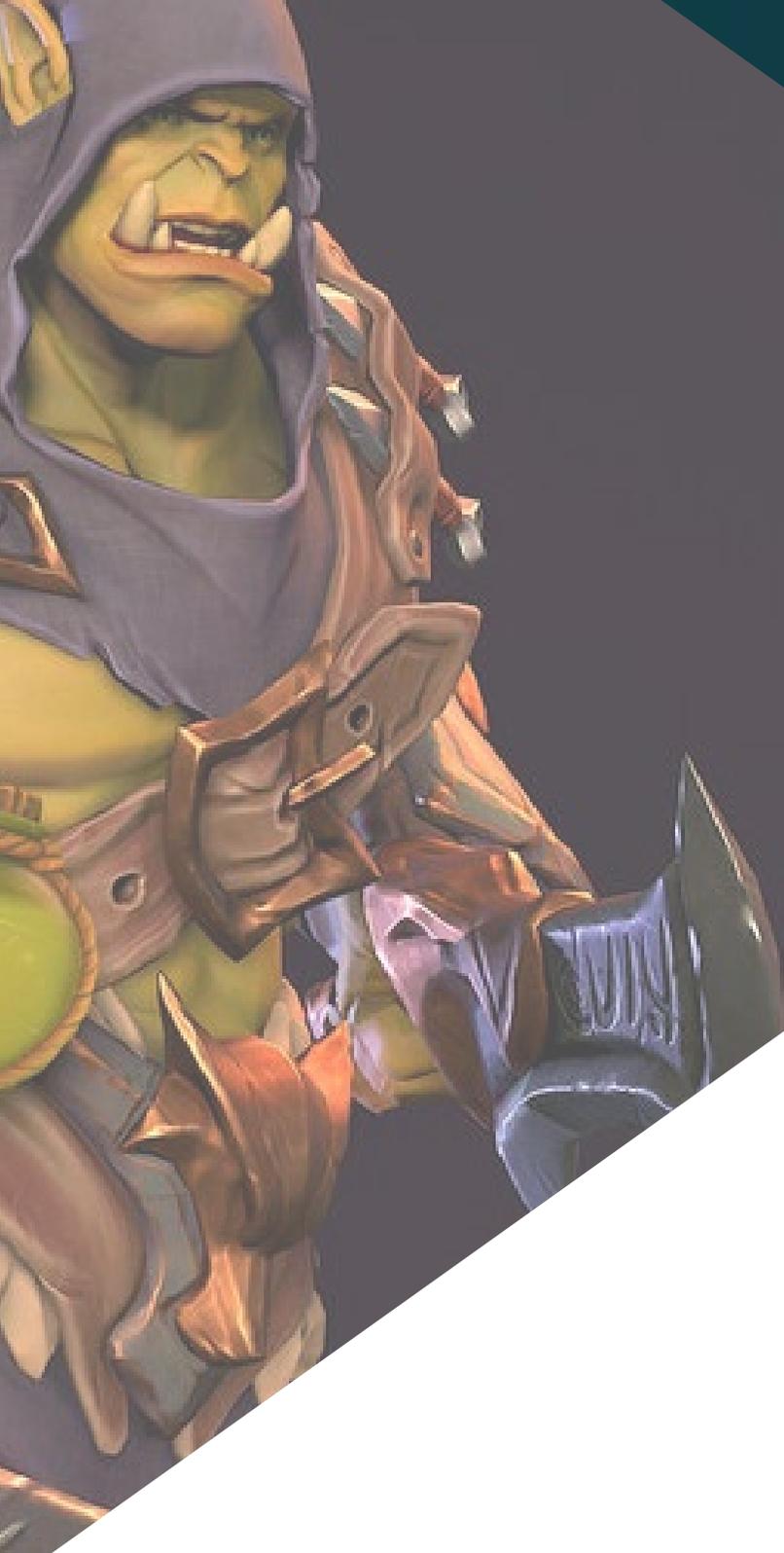


04

Structure and Content

The syllabus of the Postgraduate Certificate in Advanced Deformation Systems, Rigging of Props and Apparel has two very distinct parts. The first one, in which the Twist, Bend and Stretch & Squash deformation systems will be defined and developed; reserving a topic for the application of Proxy. And the second, which covers everything related to Rigging Props, clothing and bow.



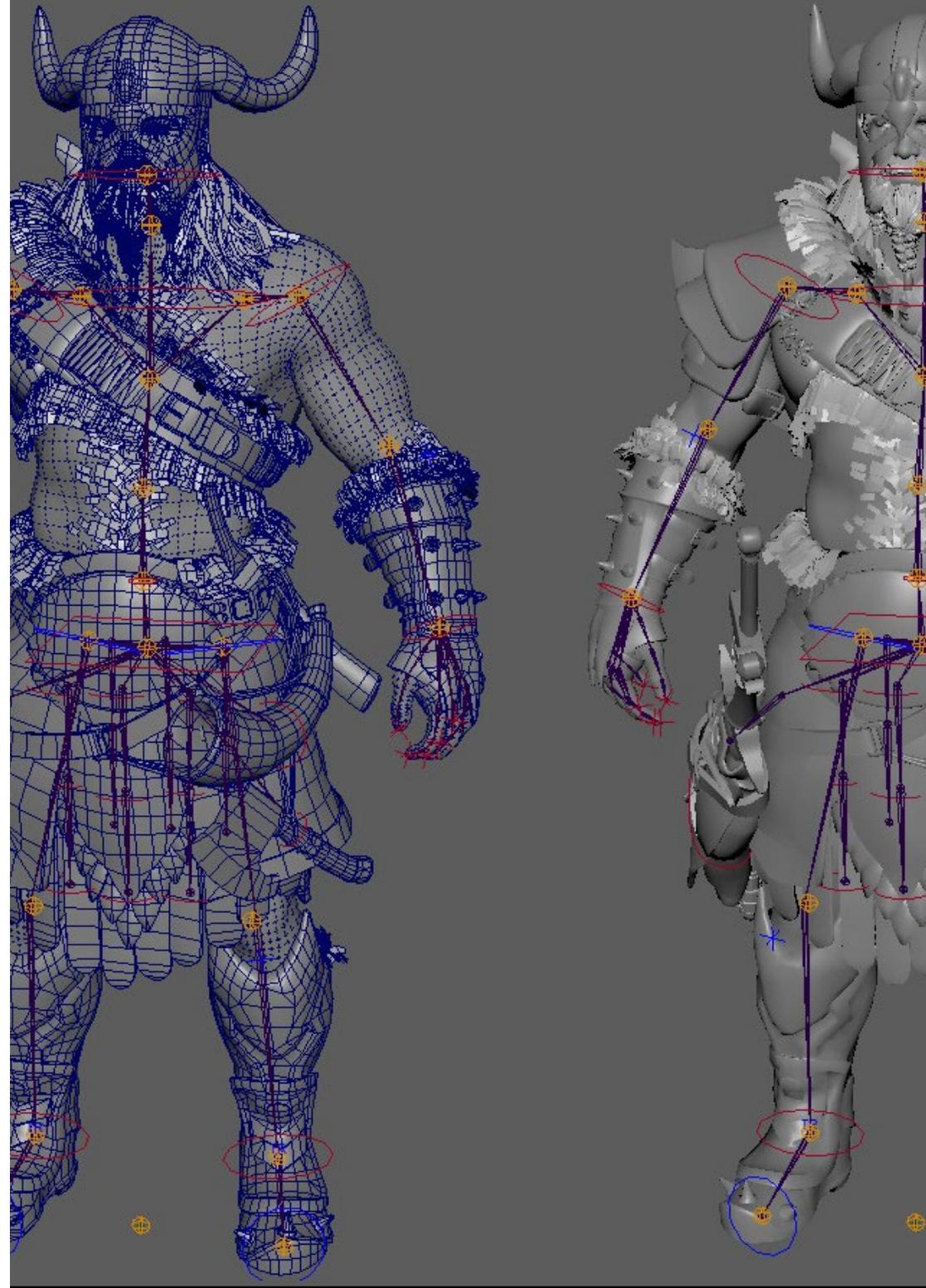


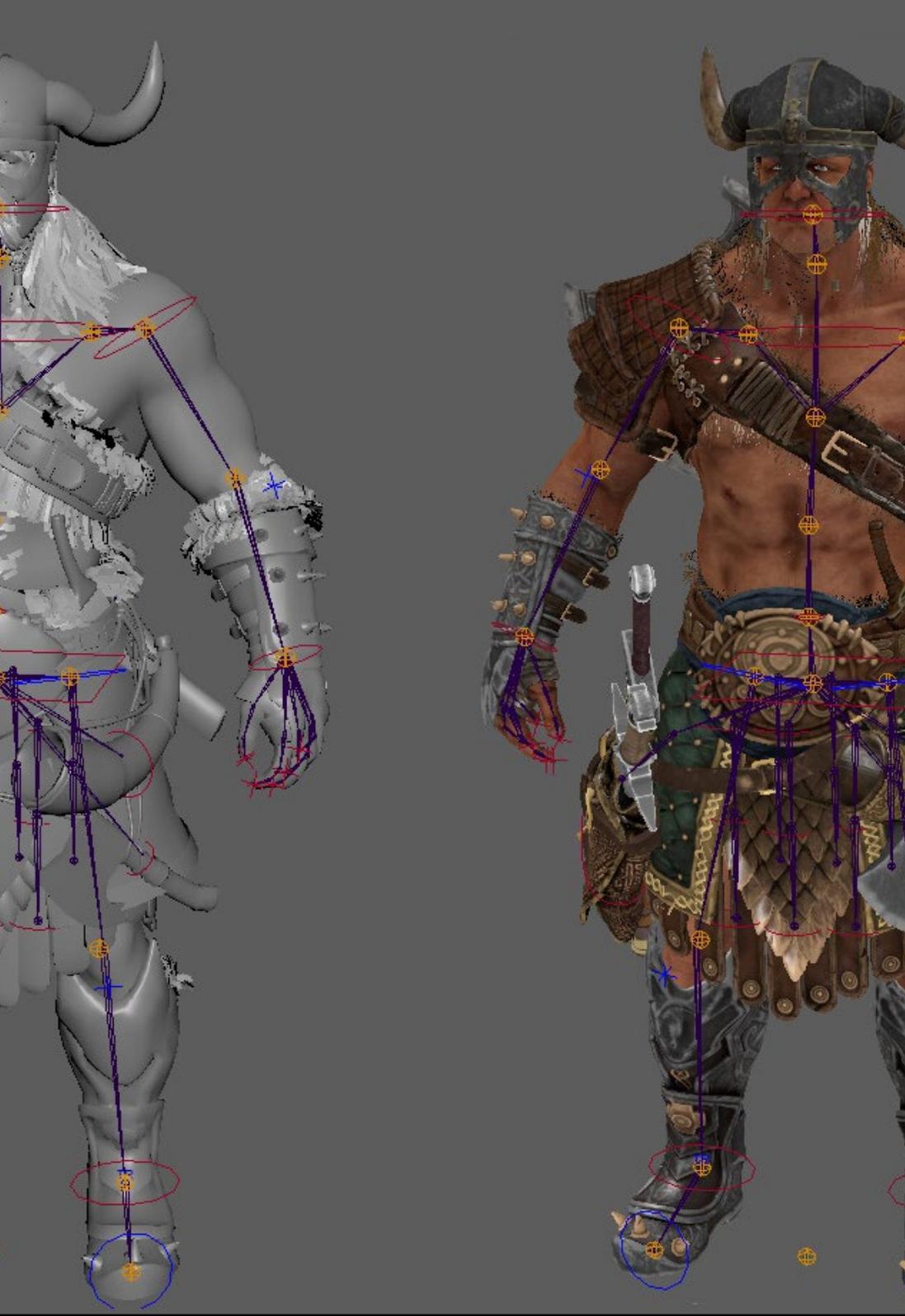
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Learn how to paint Bend system influences in a professional way thanks to TECH"

Module 1. Advanced Deformation Systems, Rigging of Props and Clothing

- 1.1. Twist System
 - 1.1.1. Anatomical Study of Limb Twisting
 - 1.1.2. Twist System
 - 1.1.3. Approach
- 1.2. Twist System Steps
 - 1.2.1. Creation of Joints Twist
 - 1.2.2. Twist Chain Orientation
 - 1.2.3. Torsion Configuration
- 1.3. Twist System Finalization
 - 1.3.1. Parts of the Extremities
 - 1.3.2. Twist Connection with FK and IK Chains
 - 1.3.3. Adding Twist Influences to Rig Deformation
- 1.4. BendSystem
 - 1.4.1. BendSystem
 - 1.4.2. System Approach
 - 1.4.3. Wire Deformer
- 1.5. Immune System Development
 - 1.5.1. Creation of Curves and Clusters
 - 1.5.2. Bend System Influence Painting
 - 1.5.3. Implementation to General Control
- 1.6. Stretch and Squash Systems
 - 1.6.1. Stretch System
 - 1.6.2. Stretch and Squash System Approach
 - 1.6.3. System Development with RemapValue Node





- 1.7. Proxys
 - 1.7.1. Proxys
 - 1.7.2. Model Splitting
 - 1.7.3. Connecting Proxies to Joints Chains
- 1.8. Rigging of Clothing
 - 1.8.1. Approach
 - 1.8.2. Scene Preparation
 - 1.8.3. Projection of Influences
- 1.9. Rigging the Props
 - 1.9.1. Props
 - 1.9.2. Approach
 - 1.9.3. System Development
- 1.10. Arc Rigging
 - 1.10.1. Deformation Study of an Arch
 - 1.10.2. Approach
 - 1.10.3. Development

“*Clothes have very particular movements that have to be meticulously reproduced. Learn their peculiarities with the topic dedicated to rigging clothes.*”

05

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





“

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

“

At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world”



You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.



The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

“*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

The case method has been the most widely used learning system among the world's leading business schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Over the course of 4 years, you will be presented with multiple practical case studies. You will have to combine all your knowledge, and research, argue, and defend your ideas and decisions.

Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



This program offers the best educational material, prepared with professionals in mind:



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Practising Skills and Abilities

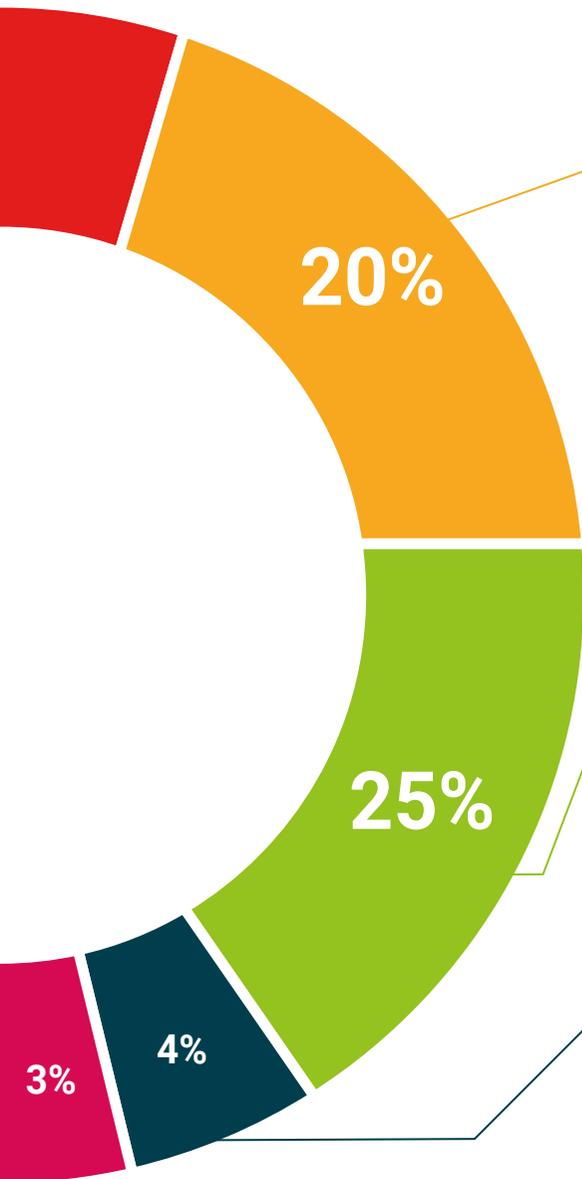
They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization we live in.



Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



06 Certificate

The Postgraduate Certificate in Advanced Deformation Systems, Rigging of Props and Apparel guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"

This program will allow you to obtain your **Postgraduate Certificate in Advanced Deformation Systems, Rigging of Props and Apparel** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

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