Postgraduate Certificate
Advanced Limb Rigging

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Advanced Limb Rigging

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

Website: **www.techtitute.com/us/videogames/postgraduate-certificate/advanced-limb-rigging**

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01
Introduction

The limbs present a certain difficulty when developing a character, due to the number of different movements they perform. In this sense, the FK (direct kinematics) and IK (inverse kinematics) systems are primordial when developing a character with an advanced Rig. They can be used separately, although their combination provides more realistic results. Qualification students will learn to identify the possibilities offered by both systems when animating. They will also learn how to create a Rig with the so-called hybrid systems, so that the animator can activate one or the other according to the convenience of the character's action. In addition, to develop this advanced system in an ideal way, the creation and addition of attributes and custom parameters in the elements of the control Rig will be discussed in depth. Therefore, as well as the use of the Node Editor tool and the creation of Scripts with Python.

This program will teach you how to create Python scripts to automate the most repetitive processes in the creation of a Rig"

The limbs of video game characters are vitally important elements, as they are present in practically all of their actions. In fact, they are one of the few parts of the character, if not the only ones, that appear so much in first and third person. For this reason, it is so necessary that the systems FK and IK are drawn up correctly.

In this sense, hybrid FK/IK systems will be considered, as well as the creation Joint chains, controls and nomenclature. Unifying both to the Main chain and also working with Parent Constrain. Finally, regarding FK/IK systems, the keys to use Node Editor and Node Reverse will be given, as well as the attributes in Shapes nodes.

In parallel, Scripts with Python will be created. That is to say, customized tools will be programmed according to the needs of the character. Meaning that the workbecomes more enjoyable and agile. The subject will affect the need for the Script, its approach and the development of the code.

These contents will be available in a multitude of formats, so that the student can choose the one that best suits his or her circumstances. In addition, the Postgraduate Certificate is fully online and without timetables, with the intention of facilitating the reconciliation of family and work.

This **Postgraduate Certificate in Advanced Limb Rigging** contains the most complete and up-to-date program on the market. The most important features include:

- The development of case studies presented by experts in Advanced Limb Rigging
- 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

The Postgraduate Present Certificate details the fundamentals of Python programming for Rigging. Therefore, you will be able to create your own tools and speed up your work"

" *The Node Editor and Node Reverse tools are essential when creating a Rig. Learn how to use them professionally in TECH"*

In this program you will learn in depth the hierarchies and nomenclatures of FK and IK hybrid systems.

Graduates of this program will know how to apply automatisms to feet and hands to make work more enjoyable.

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.

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Objectives

Graduates from the Postgraduate Certificate in Advanced Limb Rigging will become real experts in limb animation. TECH will provide its students with all the keys to work correctly with FK and IK hybrid systems, explaining their operation and peculiarities. In addition, you will learn how to program Scripts with Python, a process that involves some difficulty, but is essential to circumvent the most repetitive parts of the work.

At the end of the Postgraduate Certificate, you will have learned how to correctly configure the visibility of the FK and IK controls"

General Objectives

- Learn how to work with and IK FK
- Use different functions of Autodesk Maya to animate the Rig
- Work with Python applied to FK and IK
- Understand the behavior of joints and limbs

"The creation of Joints is one of the most important steps in the creation of a Rig. Learn to make them correctly thanks to this this program"

Specific Objectives

- Professionally create direct kinematic chains
- Professionally create inverse kinematics chains
- Create a hybrid FK and IK system for a character
- Create custom attributes on Rig elements in a specialized way
- Connect parameters and values through the Node Editor tool
- Instantiate attributes in Node Shapes
- Analyze the behavior of human body joints
- Create automations and systems for character's feet and hands
- Create custom tool for the use of FK/IK with Python
- Analyze and develop the behavior of quadruped limbs

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Course Management

The faculty of the Postgraduate Certificate in Advanced Limb Rigging will teach you all the keys to limb development in Autodesk Maya. You will learn how to create FK and IK systems, as well as their solutions, limitations, controls and nomenclatures. Always, from the hand of industry professionals with a proven track record that will provide answers to the most specific doubts.

"
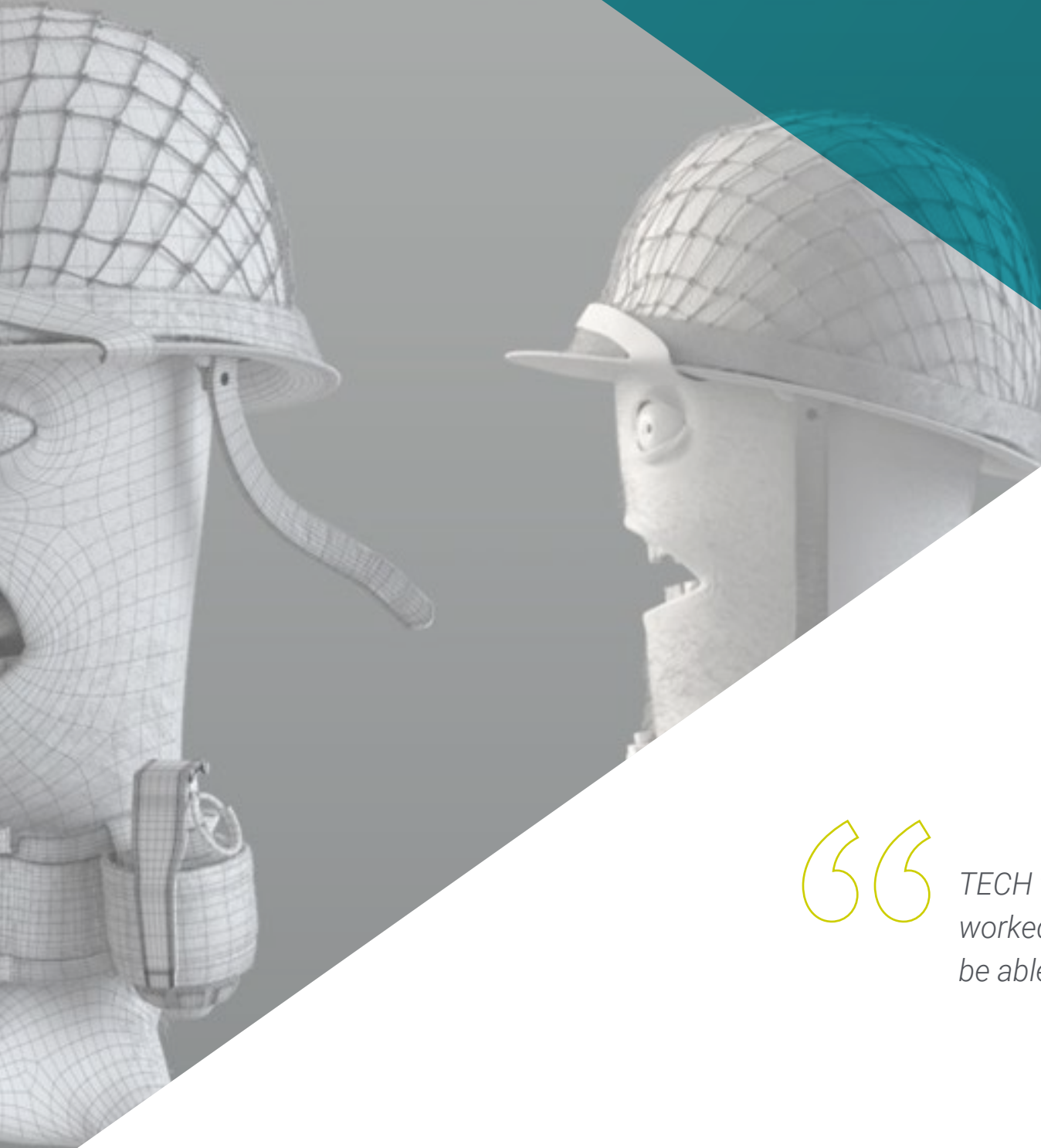
TECH teachers are experts who have worked on real Rigging projects and will be able to solve the most specific doubts"

Management

Mr. Guerrero Cobos, Alberto

- Rigger and animator Video Games videogame Vestigion Lovem Games
- Master's Degree in Art and Production in Animation by the University of South Wales
- Master in 3D Character Modeling at ANIMUM
- Master's Degree 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)
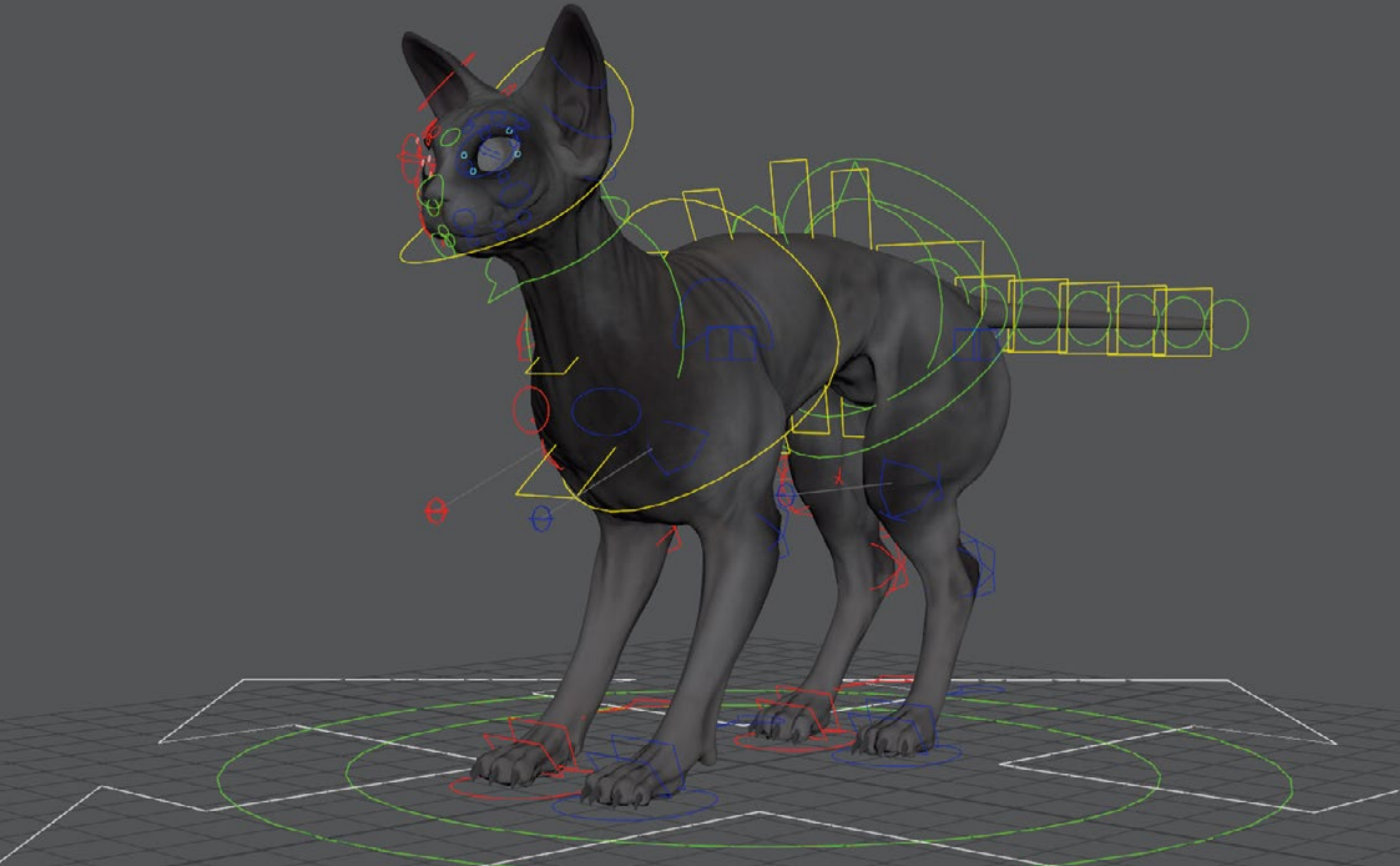
04
Structure and Content

The content of this Postgraduate Certificate focuses on the use of Fordward Konematics (FK) and Inverse Kinematics (IK) to create animations The creation of hybrid systems, the unification of systems to the Main chain, tools such as IK Handle or Pole Vector and the creation of chains of Joints, among other things, will be discussed. In addition, you will delve into Rigging for feet, hands and quadrupeds, and you will learn to create FK and IK Scripts with Python.
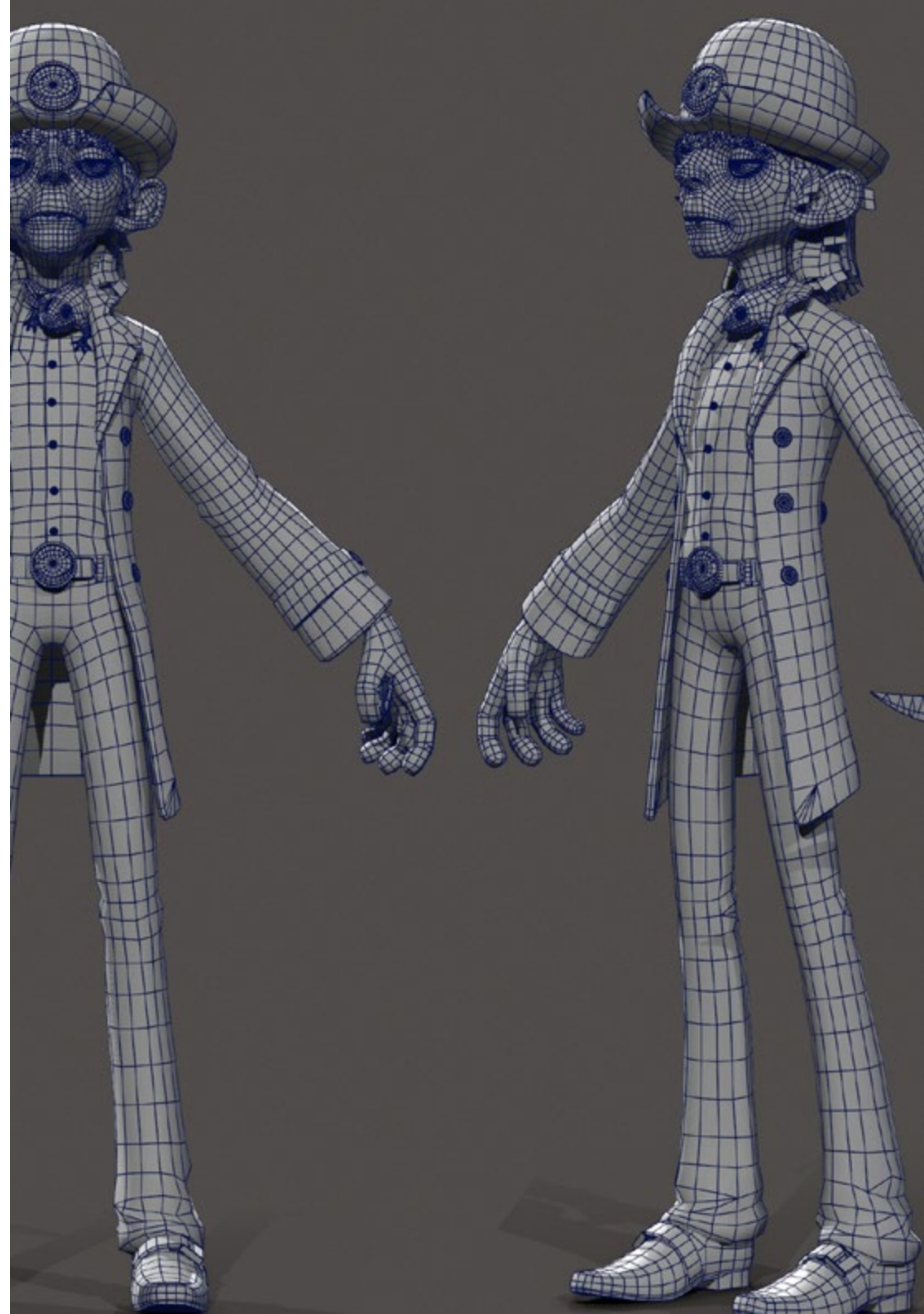
"With our program, you will learn how to create the necessary Joints chains to work with hybrid FK and IK systems"

Module 1. Advanced Limb Rigging

TECH has set aside a topic to conduct an anatomical study of quadrupeds and propose an IK system"

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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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.

30%

10%

8%

20%

25%

4%

3%

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 Limb Rigging guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.

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 Limb Rigging** 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.

Title: **Postgraduate Certificate in Advanced Limb Rigging**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

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tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Certificate in Advanced Limb Rigging

This is a program of 180 hours of duration equivalent to 6 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

Unique TECH Code: AFWORD23S   techtitute.com/certificates

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*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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