

# Postgraduate Certificate Rigging for Muscular Systems





## Postgraduate Certificate Rigging for Muscular Systems

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/in/videogames-design/postgraduate-certificate/rigging-muscular-system](http://www.techtitute.com/in/videogames-design/postgraduate-certificate/rigging-muscular-system)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 16*

05

Methodology

---

*p. 20*

06

Certificate

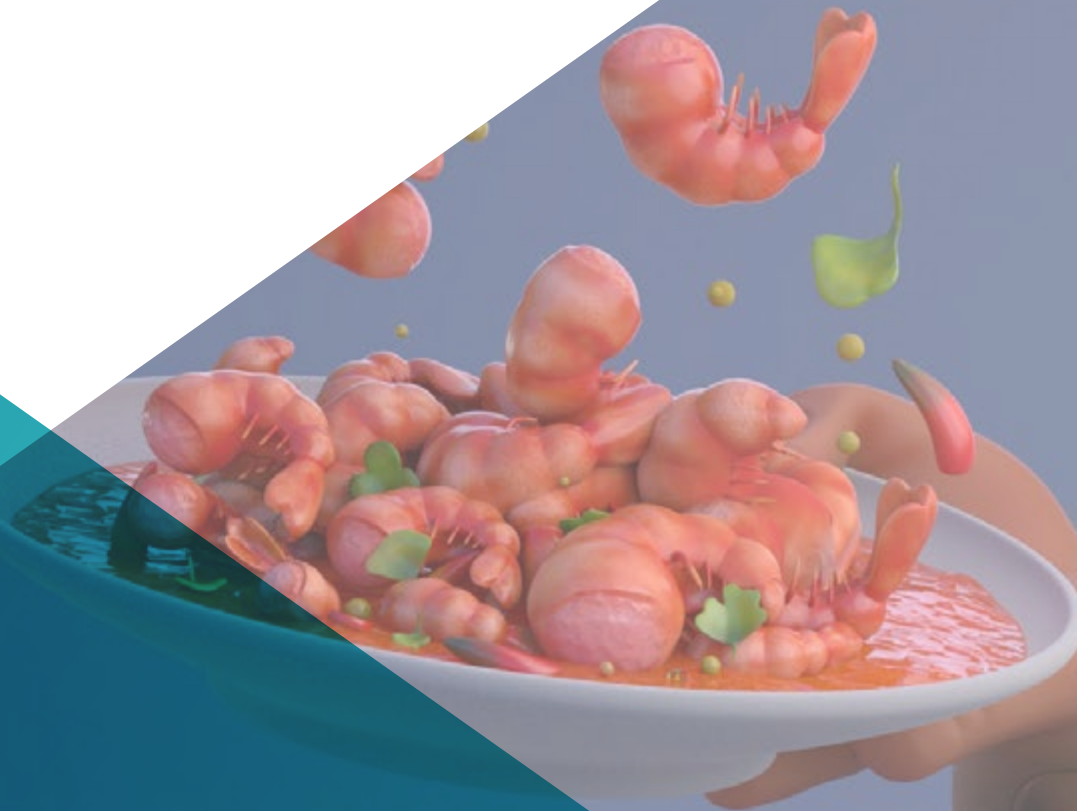
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*p. 28*

# 01

# Introduction

Rigging has undergone an exponential advance in recent years. Movie blockbusters require the implementation of hyper-realistic 3D characters either for fantastic beings or to replace a real actor. Therefore, for the professional in this field, it is crucial to keep up to date with the latest advances in the world of rigging, which are based on the 3D recreation of each of the most superficial muscles and how they function. With this reality in mind, this program is presented, which includes an anatomical muscle analysis focused on rigging, the Muscle Builder tool, muscle deformation with Muscle Spline Deformer or muscle behaviors and collisions. All this, in a 100% online mode, without timetables and with all the syllabus available from the first day. Thus providing facilities to the student's organization.





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*Learn to define muscle systems with Maya and to determine the behavior of elastic masses with this TECH Postgraduate Certificate"*

The use of muscular systems is of particular importance depending on production needs. For example, in fighting video games such as WWE or Street Fighter they play a fundamental role, since many of the characters have no clothes and the movements and collisions of the human body are continuous. This makes an analysis of human muscles absolutely necessary.

Once this anatomical analysis has been carried out, the program provides for the creation and configuration of capsules. As well as the conversion of rig elements to capsules. This is followed by a complete introduction to the creation, editing and finishing of muscles with the Muscle Builder tool.

When deforming, Muscle Spline Deformer will be used for both muscle and skin. Emphasizing deformation displacement or strength, *jiggle* and heavy muscle. Finally, collisions with KeepOut nodes and cache will be worked on to handle performance issues.

These contents will be taught in online format, without timetables and with all topics available from the first day. All you need is a device with Internet access. In this way, students will be able to organize themselves according to their needs, thus enhancing the assimilation of learning.

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

- ◆ The development of case studies presented by experts *Rigging* for Muscle Systems
- ◆ The graphic, schematic and eminently practical contents with which it is conceived provide scientific and practical information on those 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

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*Learn how to convert rig elements into capsules, as well as how to create and configure them through this program"*



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*In this course you will learn the differences between the upper and lower body when it comes to generating muscular systems"*

The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious 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 training programmed to train 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 during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

*TECH instructors will teach you how to work with Muscle Builder so that you can edit the shape of your muscles in a professional way.*

*Skin deformation has some specific needs. Thanks to TECH's training program, you will learn how to correct them with Muscle Deformer.*



# 02 Objectives

Graduates of the Postgraduate Certificate will have an in-depth knowledge of the muscular anatomy of the human body and its specific specifications for film and video games.

They will learn how to use Maya's Muscle Builder tool, as well as how to set up skin deformation and muscle behavior and collisions. Finally, we will work with the cache to optimize the muscular mechanisms as much as possible.







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*In the topic dedicated to skin deformation you will learn how to connect muscle objects to muscle deformer*”



## General Objectives

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- ◆ 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



*The program includes an in-depth learning of the Muscle Builder tool, as it is indispensable for the creation of systems"*





## Specific Objectives

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- ◆ Specialized knowledge of the use of muscular systems in film productions
- ◆ Analyze the muscular anatomy of the human body
- ◆ Conceiving the elements involved in a muscular system
- ◆ Creating and editing capsules from scratch for muscle systems
- ◆ Learn how to use the Muscle Builder tool of Autodesk Maya in a professional way
- ◆ Configuring skin deformation with muscular system
- ◆ Configuring muscle behavior
- ◆ Configure our character's muscle collisions
- ◆ Working with the cache to optimize muscle mechanisms

03

# Course Management

The faculty of the Postgraduate Certificate in Rigging for Muscular Systems has an extensive professional and academic background. Providing the student with all his knowledge and advice on human anatomy, the creation of muscular systems and, above all, working with Muscle Builder. It is a specific tool that must be used methodically.







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*TECH's faculty members will provide you with tips to make working with Muscle Builder more effective and enjoyable"*



## Management



### D. Guerrero Cobos, Alberto

- ◆ Current professor of 3D Animation, Games and Interactive Environments at ILERNA (Seville).
- ◆ Content creator for Character Rigging and 3D Animation Course in MasterD
- ◆ Rigger and animator in Vestigion, videogame developed by Lovem Games
- ◆ 3D animation, games and interactive environments coordinator at Atlántida Training
- ◆ Degree in Multimedia and Graphic Design in ESNE
- ◆ Master of Arts - Animation Production at the University of South Wales
- ◆ Master in 3D Character Modeling at ANIMUM
- ◆ Master's Degree in 3D Character Animation for Film and Video Games at ANIMUM
- ◆ Advanced 3D Character Rigging Course in Autodesk Maya in ANIMUM



# 04

## Structure and Content

Learning about muscle systems will begin with an anatomical muscle analysis focused on *rigging*. As well as how to create and edit capsules. Subsequently, the Muscle Builder and Muscle Spline Deformer tools will be used to create and deform muscles respectively. Finally, you will learn how to deform the skin, how to create realistic behaviors and muscle collisions, and how to work with cache.





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*Graduates will learn how to work with KeepOut nodes to generate realistic collisions in characters”*

## Module 1. Rigging for Muscular Systems

- 1.1. Muscular Systems
  - 1.1.1. Muscular Systems
  - 1.1.2. Behavior of Elastic Masses
  - 1.1.3. Workflow with Maya Muscle System
- 1.2. Muscular Anatomy Focused on Character Rigging
  - 1.2.1. Upper Body
  - 1.2.2. Undercarriage
  - 1.2.3. Arms
- 1.3. Capsule Creation
  - 1.3.1. Capsule Creation
  - 1.3.2. Capsule Configuration
  - 1.3.3. Conversion of Rig Elements to Capsules
- 1.4. Muscle Building
  - 1.4.1. Muscle Creation Window
  - 1.4.2. State of Poses and Muscle Sculpting
  - 1.4.3. Muscle Editing
- 1.5. Muscle Builder Tool
  - 1.5.1. Muscle Building with Muscle Builder
  - 1.5.2. Muscle Shape Editing
  - 1.5.3. Muscle Finish
- 1.6. Muscle Spline Deformer with Muscle Spline Deformer
  - 1.6.1. Create Muscle Spline Deformer
  - 1.6.2. Spline Deformer Configuration
  - 1.6.3. Master Muscle Control







- 1.7. Skin Deformation
  - 1.7.1. Types of Deformations
  - 1.7.2. Muscle Deformer Application
  - 1.7.3. Connection of Muscle Objects to Muscle Deformers
- 1.8. Muscle Behavior
  - 1.8.1. Muscle Directional Object
  - 1.8.2. Deformation Displacement
  - 1.8.3. Strength, *Jiggle* and Heavy Muscle
- 1.9. Muscle Collisions
  - 1.9.1. Types of Collisions
  - 1.9.2. Intelligent Collisions
  - 1.9.3. KeepOut Nodes
- 1.10. Working with Cache
  - 1.10.1. Performance Problems with Muscular Systems
  - 1.10.2. Cache
  - 1.10.3. Cache Point Management



*The program provides for cache work to solve performance problems in muscle systems"*

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.







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*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"*

## At TECH we use the Case Method

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

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*At TECH, you will experience a way of learning that is shaking the foundations of traditional universities around the world"*



*We are the first online university to combine Harvard Business School case studies with a 100% online learning system based on repetition.*





## A learning method that is different and innovative

This intensive Video Game Design program at TECH Technological University prepares you to face all the challenges in this field, both nationally and internationally.

We are committed to promoting your personal and professional growth, the best way to strive for success, that is why, at TECH Technological University, you will use Harvard *case studies*, with which we have a strategic agreement that allows us, to offer you material from the best university in the world.



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

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

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

Our university is the first in the world to combine Harvard University case studies with a 100%-online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance Harvard case studies 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 university 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.



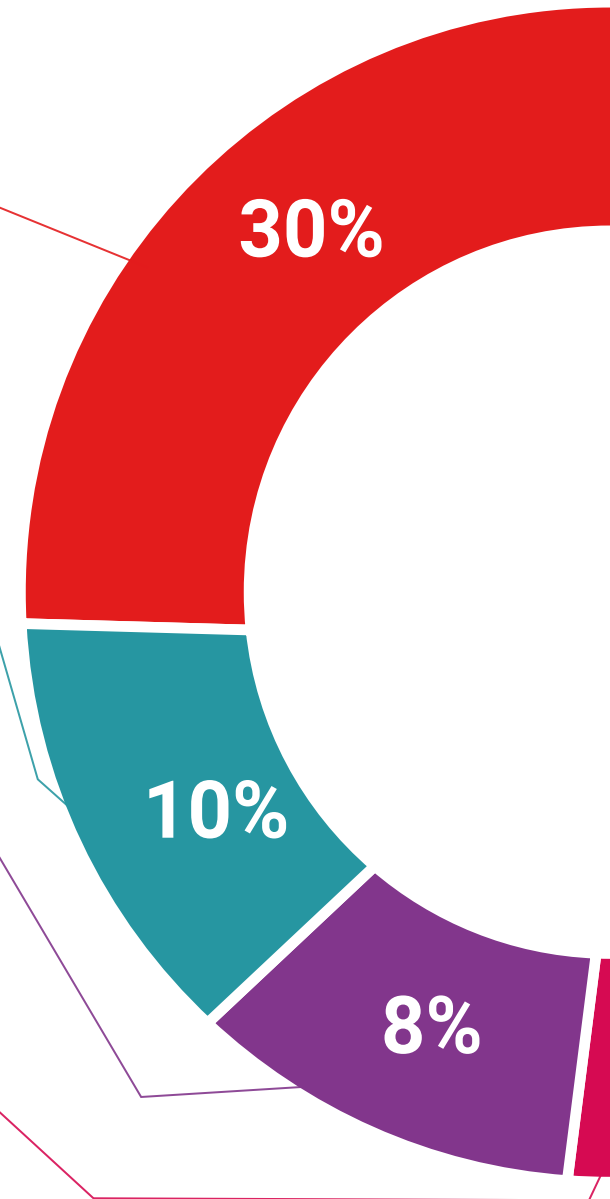
### Practising Skills and Abilities

They will carry out activities to develop specific competencies and skills in each thematic 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

They will complete a selection of the best case studies in the field used at Harvard. Cases that are presented, analyzed, and supervised by the best senior management 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 multimedia content presentation training Exclusive system 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 your goals.





# 06 Certificate

The Postgraduate Certificate in Rigging for Muscular Systems guarantees, in addition to the most rigorous and up-to-date training, access to a Postgraduate Certificate issued by TECH Technological University.



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*Successfully complete this training program  
and receive your university certificate  
without travel or laborious paperwork”*

This **Postgraduate Certificate in Rigging for Muscular Systems** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery\*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Rigging for Muscular Systems**

Official N° of Hours: **150 h.**



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

health future  
confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development languages  
virtual classroom



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- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online



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