

Postgraduate Certificate Machine Creation through Digital Sculpture





Postgraduate Certificate Machine Creation through Digital Sculpture

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

Website: www.techtute.com/us/design/postgraduate-certificate/machine-creation-digital-sculpture

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

p. 28

01

Introduction

One of the most important parts of 3D modeling is the creation of machinery and vehicles, both from a professional and artistic point of view. The automotive, model or toy building, video game, film and advertising industries are always looking for experts in the field of *Hard Surface*, which has given rise to specialized artists in the area. Over time, we have seen how machines and their uses have evolved. Through this program, the student will understand how styles are conceptualized and how to handle the tools, techniques and programs necessary to obtain high quality patterns.





“

You will create your first rendering studio with a professional lighting engine such as Arnold, used by Sony Pictures and integrated into 3D Max and Maya”

The implementation of Digital Sculpture in different industries has increased, largely thanks to 3D printing, three-dimensional scanning, video game engines and milling. This Postgraduate Certificate is dedicated to covering specific knowledge of everything related to Machine Building.

Students will explore the evolution of vehicles and robots over time, as well as the conceptualization of styles, shape carving and element texturizing in *Substance Painter*, to be able to work with genres that range from photorealism to many other aesthetic forms.

This program opens the field to further develop sculpting and integrate it with structural modeling techniques in 3D Max and organic forms in ZBrush. It also covers mesh modeling, using an efficient and fast production pipeline in CGI, and incorporates digital sculpture to work with various models. Produce work with optimal results.

In this 6-week program, students create their first rendering studio with professional lighting engines and check the incidence of luminosity in their projects to obtain correct volume finishing.

Taught through an innovative methodology of total *online* study implemented by TECH Global University, which allows professionals continuous and efficient training through the device of their choice, an internet connection, and the accompaniment of an expert teaching team at all times.

This **Postgraduate Certificate in Machine Creation through Digital Sculpture** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- ◆ Practical cases presented by experts in 3D modeling and digital sculpture.
- ◆ 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 about the design and evolution of robots, vehicles and cyborgs through time, and study their decay by sculpting shapes and using Substance Painter”

“ *This course opens doors to the automotive, model making, toy, video game, cinema and advertising sectors. Become an expert in Hard Surface* ”

The program's teaching staff includes professionals from the fashion industry who contribute with their work experience, as well as renowned specialists from leading companies 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 an immersive training experience designed to train for real-life 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 professional will be assisted by an innovative system of interactive videos made by renowned experts.

Thanks to TECH's methodology, you will be able to apply theoretical knowledge to real situations.

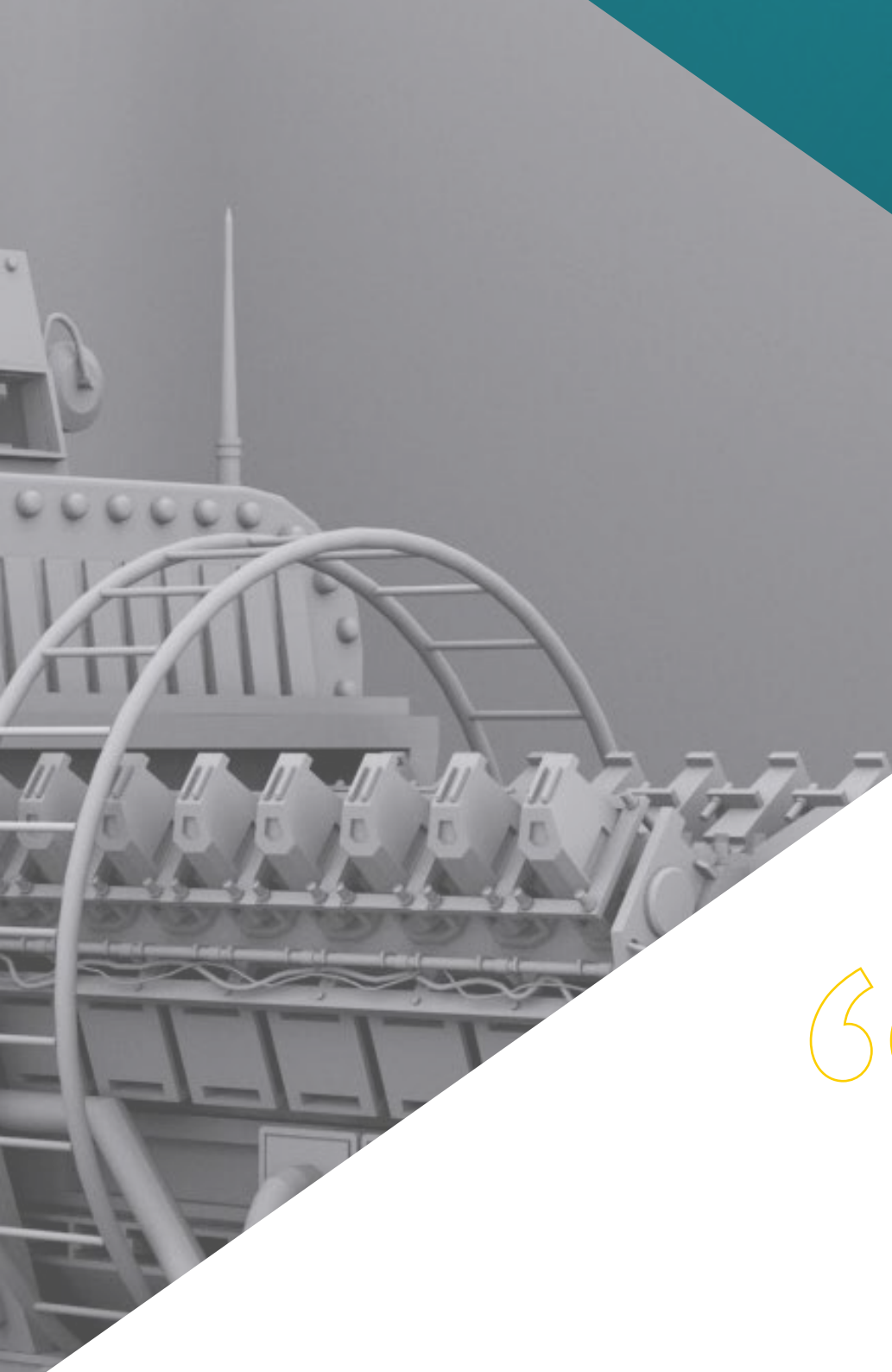
Quickly improve your projects by incorporating digital modeling in three dimensions.



02 Objectives

This Postgraduate Certificate opens the doors to professionalization by providing in-depth knowledge on Machine Creation through Digital Sculpture. Create, characterize, develop and model *robots*, vehicles and cybords; learn advanced use and creation of IMM and Chisel brushes. In addition to the set of techniques and softwares detailed in the syllabus, which will allow the professional to offer clients or employers efficient results when developing complex projects in three dimensions.





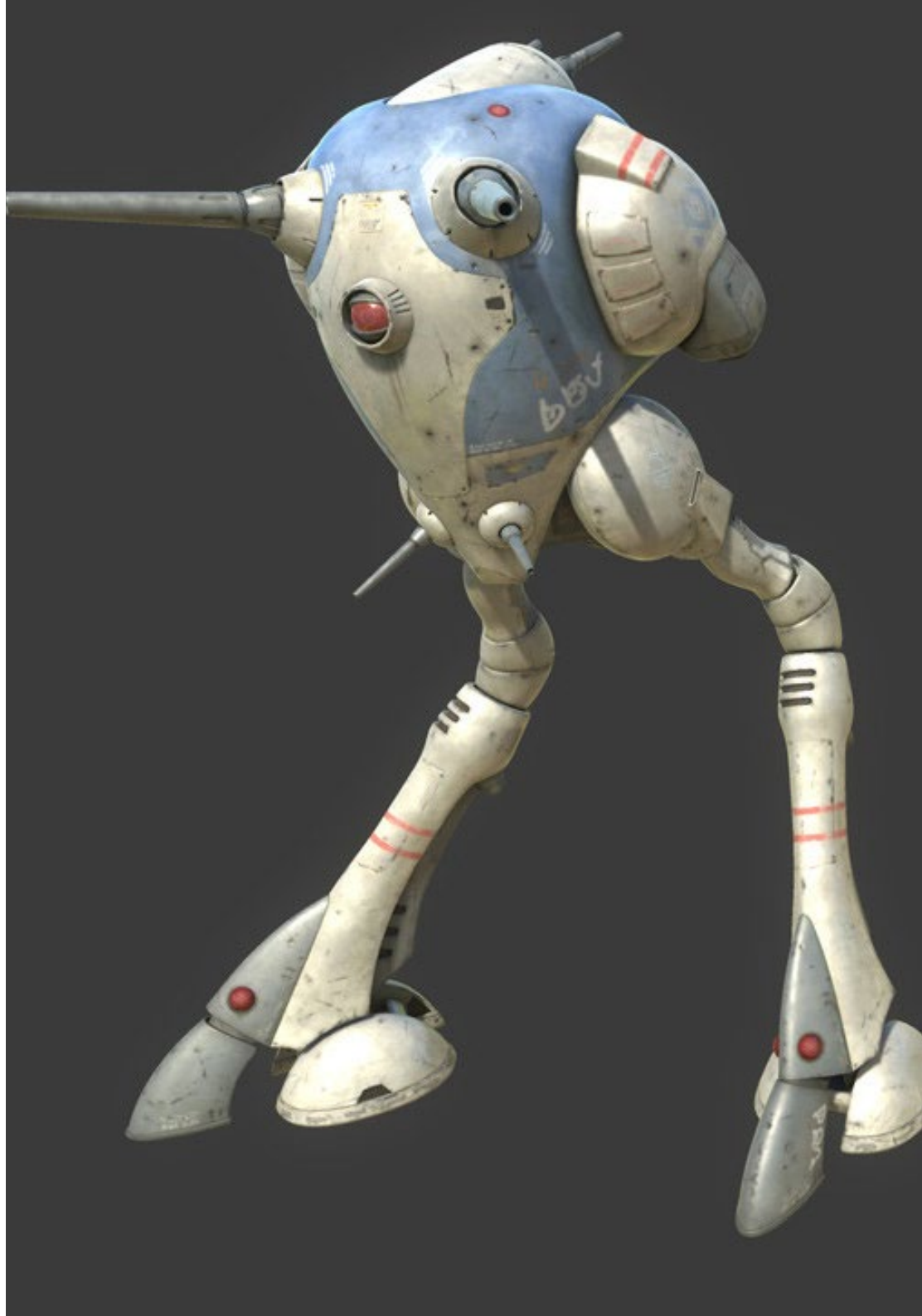
“

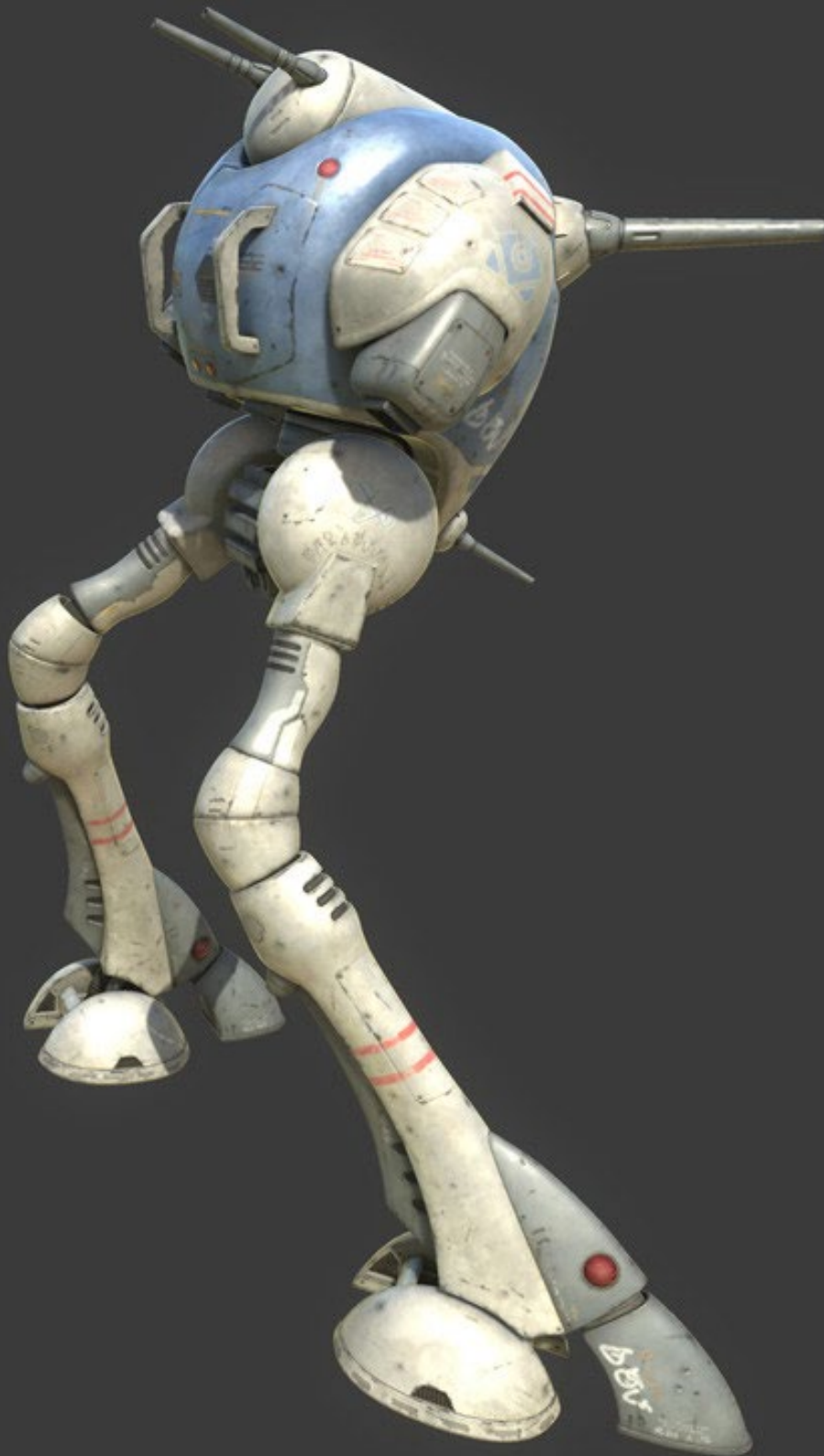
Stand out as a subject matter expert and find new opportunities in a competitive digital world"



General Objectives

- ◆ Understand the necessity of having an adequate topology at all levels of development and production
- ◆ Understand Machine Building techniques to enhance digital sculpture projects.
- ◆ Advanced management and use of various organic modeling systems, *Edit Poly and Splines*
- ◆ Produce specialized, *Hard Surface* and infoarchitecture finishes
- ◆ Understand the current demands of the movie and video game industries in order to offer best results





Specific Objectives

- ◆ Create, characterize and model robots, vehicles and cyborgs
- ◆ Manage internal modeling masks
- ◆ Develop robots, vehicles and cyborgs through time and study their decay by sculpting shapes and using Substance Painter
- ◆ Adapt work to biomimicry, science fiction or *cartoon* aesthetics
- ◆ Create a lighting studio using Arnold
- ◆ Master rendering in photorealistic and non-photorealistic aesthetics
- ◆ Launch *Wireframerender*

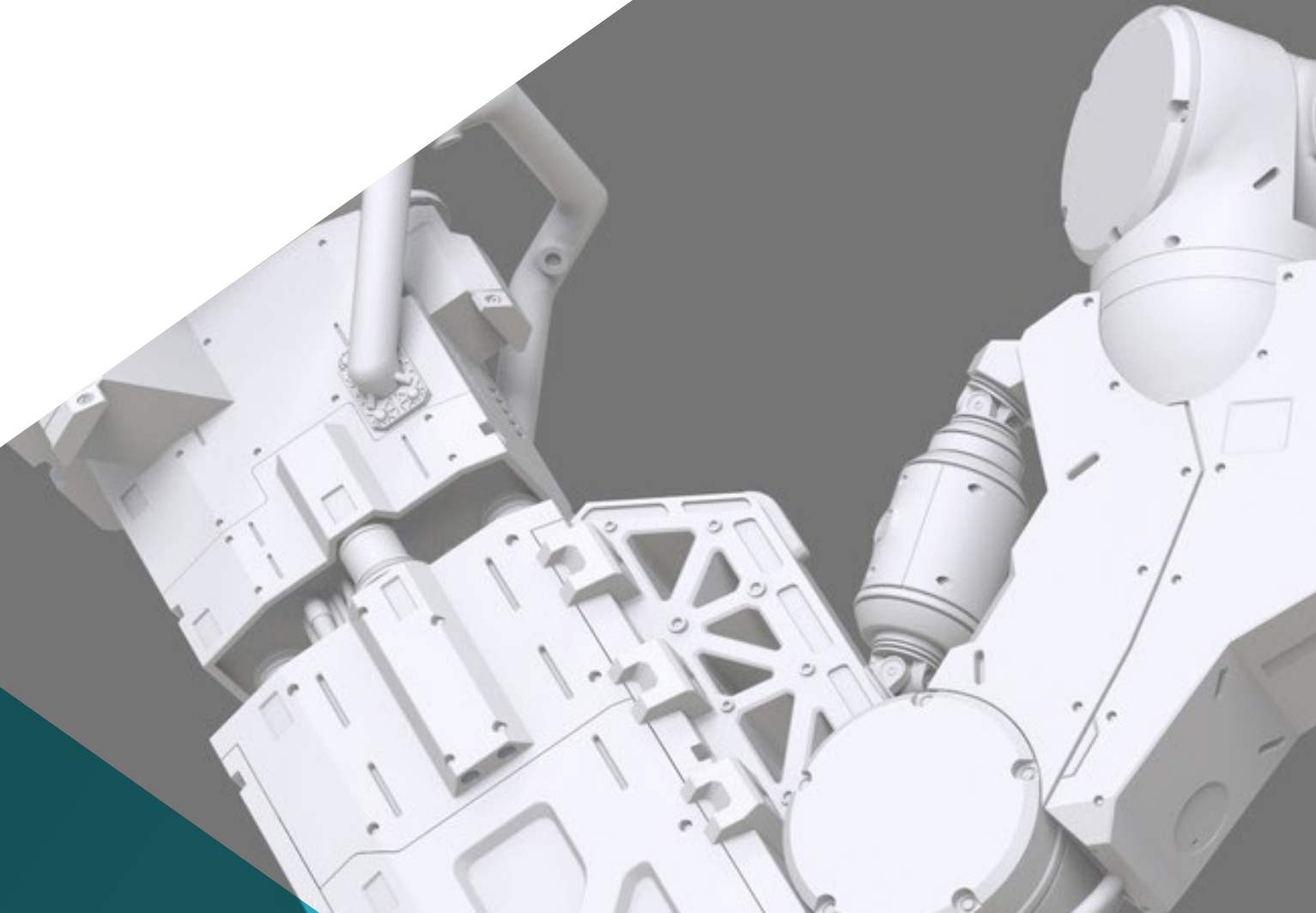
“

Choose to perfect your knowledge in 3D modeling and excel in the Creation of Machines through Digital Sculpture thanks to this Postgraduate Certificate"

03

Course Management

To ensure that the learning process is properly developed, TECH Global University has selected a high-level teaching staff composed of professional specialized in 3D subject of modeling. They transmit their knowledge through innovative methods so that students learn the subjects in an effective way and are able to integrate them in their professional activities.





“

You will feel accompanied in your learning process at all times. You will have a professional team at your side and ready to obtain effective results”

Management



Mr. Sequeros Rodríguez, Salvador

- Freelance 2D/3D modeler and generalist
- Concept Art and 3D Models for Slicecore. Chicago
- Videomapping and modeling, Rodrigo Tamariz. Valladolid
- Professor of Higher-Level Training Cycle in 3D Animation. Higher Education School of Image and Sound ESISV. Valladolid
- Professor of Higher-Level Training Cycle GFSG in 3D Animation. European Institute of Design IED Madrid
- 3D modeling for the falleros Vicente Martinez and Loren Fandos. Castellón
- Master's Degree in Computer Graphics, Games and Virtual Reality. URJC University. Madrid
- Degree in Fine Arts at the University of Salamanca (specializing in Design and Sculpture)



04

Structure and Content

This Postgraduate Certificate comprises practical and theoretical content on the Creation of Machines through Digital Sculpture, available in a 100% *online* format which can be studied in a dynamic and secure environment in 6 weeks. It allows students to combine their routines perfectly with the professional training process. You will master techniques and tools thanks to interactive content that is delivered in an effective way and makes the user experience much more agile. Share in communities of specialists and gain access to forums, meeting rooms and private chats with your faculty, as well as to downloading the syllabus for consultation without an internet connection.



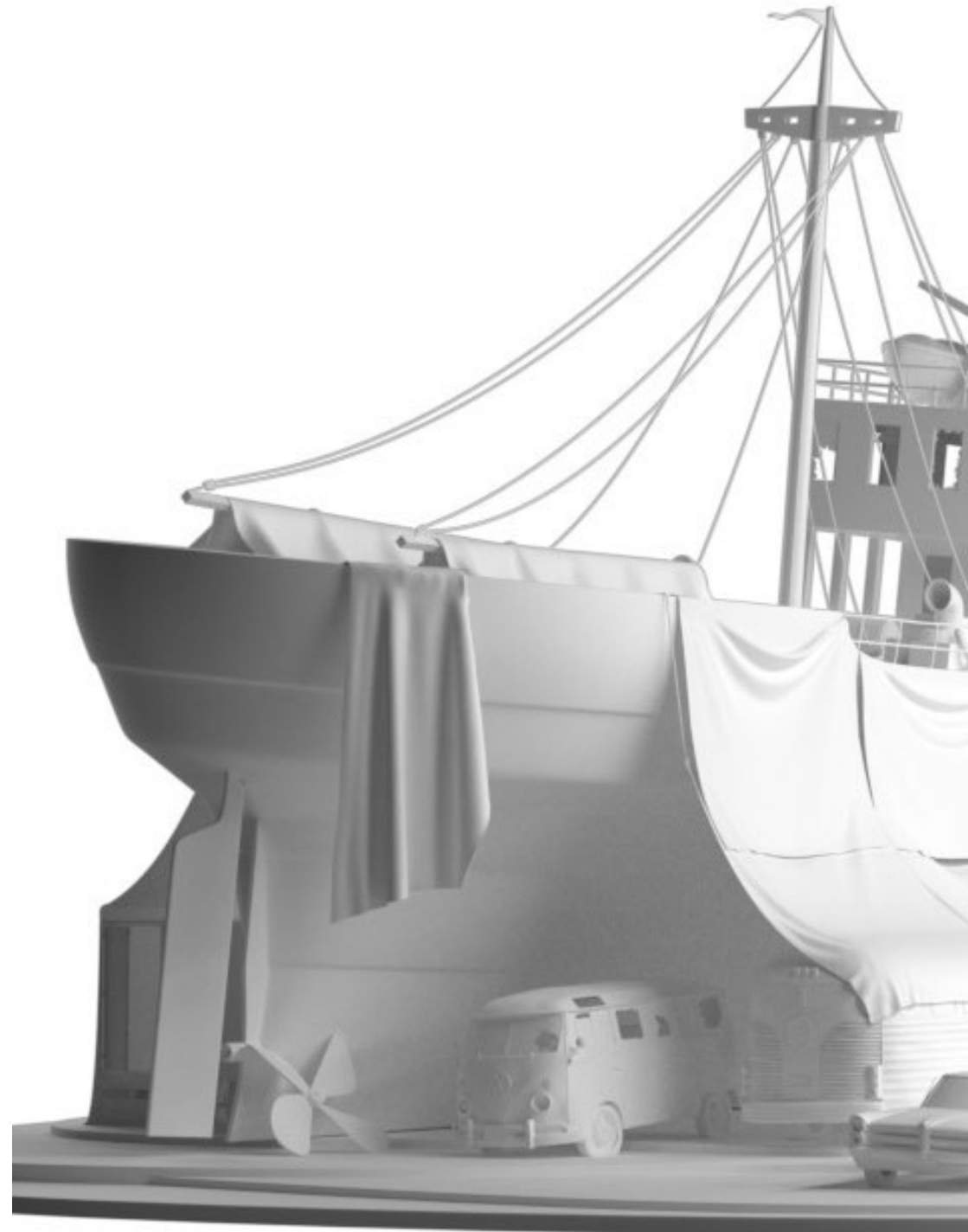


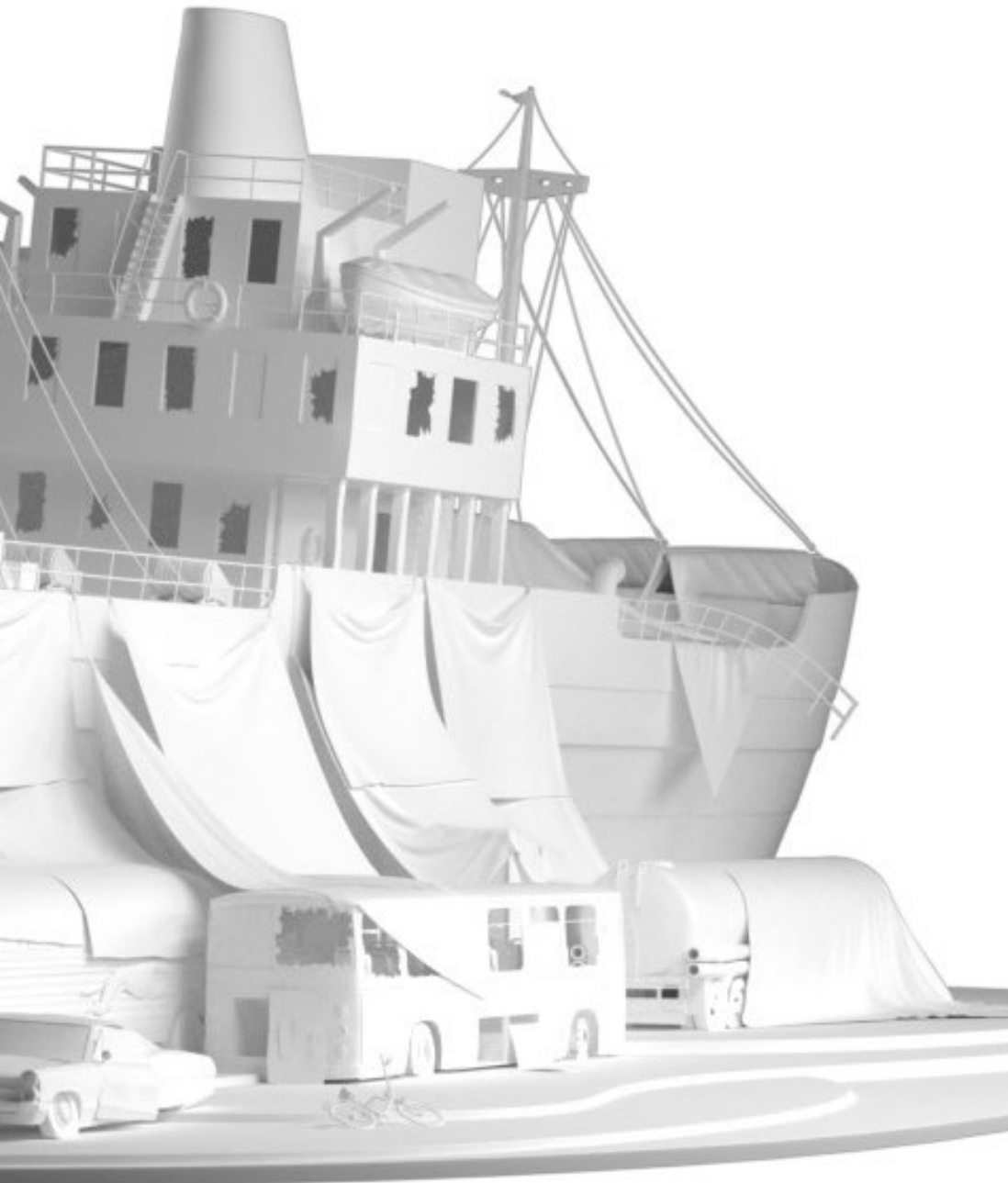
“

To create is to be able to bring what you have in your imagination to life; study the best techniques and do it as a true professional"

Module 1. Machine Creation

- 1.1. Robots
 - 1.1.1. Functionality
 - 1.1.2. *Character*
 - 1.1.3. Motor Skills in their Structure
- 1.2. Robot Exploded View
 - 1.2.1. IMM and Chisel Brushes
 - 1.2.2. *Insert Mesh* and *Nanomesh*
 - 1.2.3. *ZModeler* in *Zbrush*
- 1.3. Cybord
 - 1.3.1. Sectioned by Means of Masks
 - 1.3.2. *Trim Adaptive* and *Dynamic*
 - 1.3.3. Mechanization
- 1.4. Ships and Aircraft
 - 1.4.1. Aerodynamics and Smoothing
 - 1.4.2. Surface Texture
 - 1.4.3. Cleaning of Polygon Mesh and Details
- 1.5. Land Vehicles
 - 1.5.1. Vehicle Topology
 - 1.5.2. Modeling for Animation
 - 1.5.3. Caterpillars
- 1.6. Passage of Time
 - 1.6.1. Credible Models
 - 1.6.2. Materials in Time
 - 1.6.3. Oxidants





- 1.7. Accidents
 - 1.7.1. Collisions
 - 1.7.2. Object Fragmentation
 - 1.7.3. Destruction Brushes
- 1.8. Adaptations and Evolution
 - 1.8.1. Biomimicry
 - 1.8.2. Sci-Fi, Dystopias, Uchronias and Utopias
 - 1.8.3. *Cartoon*
- 1.9. Render Realistic *Hardsurface*
 - 1.9.1. Studio Scene
 - 1.9.2. Light
 - 1.9.3. Physical Camera
- 1.10. Render NPR *Hardsurface*
 - 1.10.1. *Wireframe*
 - 1.10.2. *Cartoon Shader*
 - 1.10.3. Illustration

“ Obtain your qualification in six weeks with this Postgraduate Certificate in Machine Creation through Digital Sculpture and make your way in the freelance or corporate job market”.

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.



A photograph of a desk with a laptop, a blue pen, and a silver marker. The image is partially obscured by a teal and white geometric overlay.

“

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.



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

The case method is the most widely used learning system in the best faculties in the world. 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 we face in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their 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.

With this methodology we have 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, markets, and financial 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 that we are experiencing.



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 Machine Creation through Digital Sculpture guarantees students, in addition to the most rigorous and up-to-date education, access to a qualification 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 Machine Creation through Digital Sculpture** 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 Machine Creation through Digital Sculpture**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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



Postgraduate Certificate Machine Creation through Digital Sculpture

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

Postgraduate Certificate Machine Creation through Digital Sculpture

