

# Postgraduate Certificate Advanced Prediction Techniques



## Postgraduate Certificate Advanced Prediction Techniques

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

Website: [www.techtute.com/us/engineering/postgraduate-certificate/advanced-prediction-techniques](http://www.techtute.com/us/engineering/postgraduate-certificate/advanced-prediction-techniques)

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# 01

# Introduction

Advanced forecasting techniques are essential for any engineer who wants to excel in their field. Forecasting is a critical skill in most engineering disciplines, as it enables engineering professionals to make informed and strategic decisions. In addition, advanced techniques are even more valuable because they can predict accurate results in more complex situations. For this reason, TECH has designed a degree that allows students to maximize their knowledge of aspects such as RRR Regression, the General Linear Regression Model or Statistical Inference in Nonlinear Regression, among others. All this, thanks to a 100% online modality and with the most dynamic and practical multimedia materials available in the academic market.



Annual Storage	Cumulative Storage	Monthly Storage Cost
Q111	6482,244	Q11
Q112	6511,528	Q12
Q113	6540,812	Q13
Q114	6570,096	Q14
Q115	6600,380	Q15
Q116	6630,664	Q16
Q117	6660,948	Q17
Q118	6691,232	Q18
Q119	6721,516	Q19
Q120	6751,800	Q20
Q121	6782,084	Q21
Q122	6812,368	Q22
Q123	6842,652	Q23
Q124	6872,936	Q24
Q125	6903,220	Q25
Q126	6933,504	Q26
Q127	6963,788	Q27
Q128	6994,072	Q28
Q129	7024,356	Q29
Q130	7054,640	Q30
Q131	7084,924	Q31
Q132	7115,208	Q32
Q133	7145,492	Q33
Q134	7175,776	Q34
Q135	7206,060	Q35
Q136	7236,344	Q36
Q137	7266,628	Q37
Q138	7296,912	Q38
Q139	7327,196	Q39
Q140	7357,480	Q40
Q141	7387,764	Q41
Q142	7418,048	Q42
Q143	7448,332	Q43
Q144	7478,616	Q44
Q145	7508,900	Q45
Q146	7539,184	Q46
Q147	7569,468	Q47
Q148	7600,752	Q48
Q149	7631,036	Q49
Q150	7661,320	Q50
Q151	7691,604	Q51
Q152	7721,888	Q52

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*Enroll now and acquire new skills in Advanced Forecasting Techniques quickly and in a 100% online modality"*



Mastering advanced forecasting techniques is essential for any engineer seeking to improve their skills and increase their value in the marketplace. The ability to predict accurate results can help make informed decisions, reduce risk and optimize efficiency on projects of any size or complexity.

For this reason, TECH has designed a Diploma in Advanced Forecasting Techniques in order to be able to exercise their work as specialists, with the highest possible efficiency and quality. Thus, throughout this program, aspects such as the General Linear Regression Model, Parameter Estimation in a Nonlinear System, or Lasso Regression will be addressed.

All this, through a convenient 100% online modality that allows students to organize their schedules and studies, combining them with their other day-to-day work and interests. In addition, this degree has the most complete theoretical and practical materials on the market, which facilitates the student's study process and allows them to achieve their objectives quickly and efficiently.

This **Postgraduate Certificate in Advanced Prediction Techniques** 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 Prediction Techniques
- ◆ The graphic, schematic and eminently practical contents of the book provide sporting 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



*Become an expert in the General Linear Regression Model in only 6 weeks and with total freedom of organization"*

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*Have access to all the content on Regression Ridge or Elasticnet from day one and with any device with internet connection, be it tablet, mobile or computer”*

The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its 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 education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

*Delve into essential aspects such as statistical inference in non-linear regression, from the comfort of your home, 24 hours a day.*

*Achieve professional success in one of the most promising areas of Computational Statistics, thanks to TECH and the most innovative teaching materials.*



# 02 Objectives

The final objective of this Postgraduate Certificate in Advanced Prediction Techniques is for the student to acquire new skills and competencies in this area. An update that will allow the student to work with the highest possible quality and efficiency. All this, thanks to TECH and a 100% online modality that gives total freedom of organization and schedules to the student.







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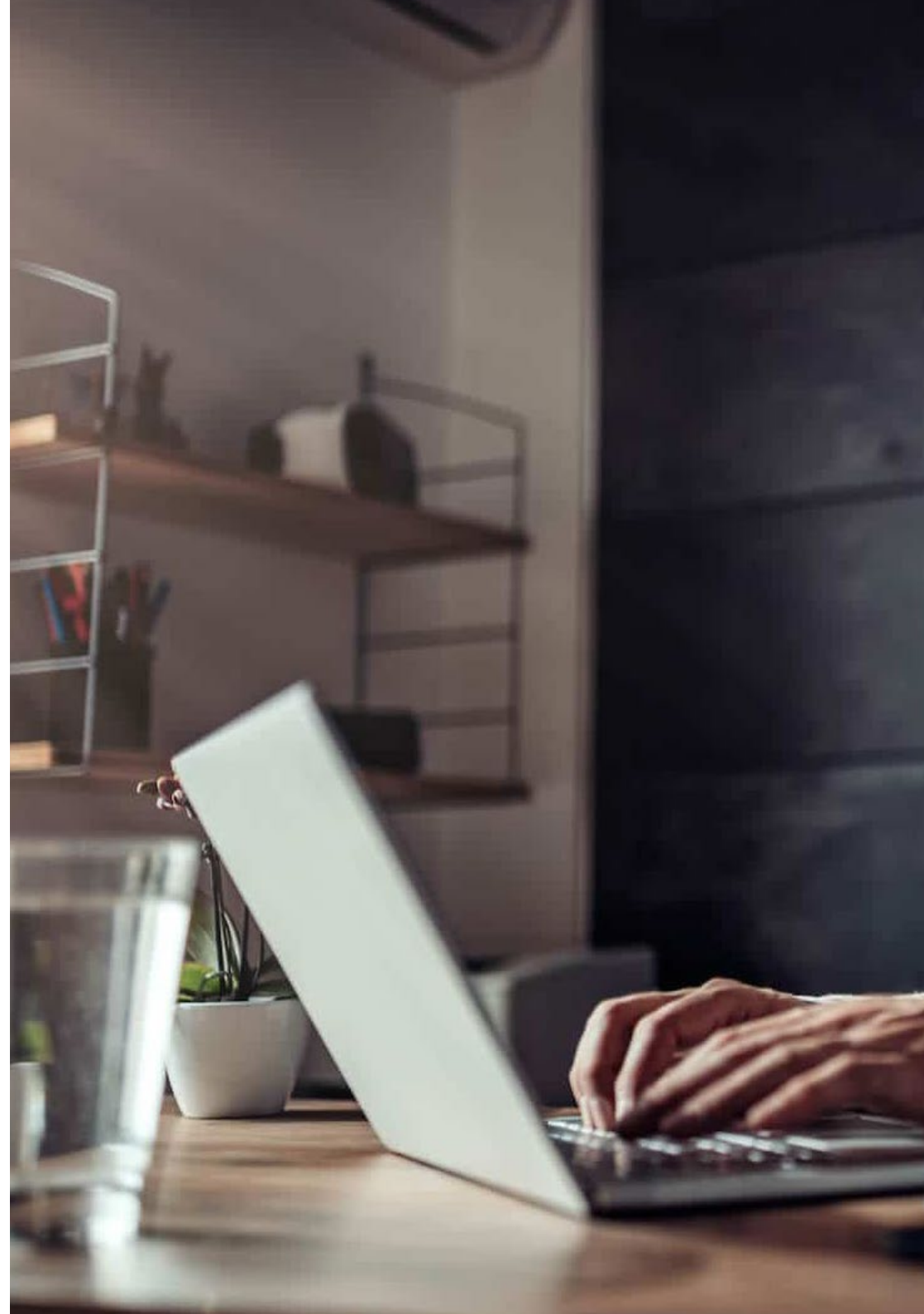
*Enhance your professional profile in aspects such as parameter estimation methods, from the comfort of your own home and without the need to travel”*



## General Objectives

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- ◆ Provide graduates with the latest and most exhaustive information on Computational Statistics, which will help them specialize in the field and reach the highest level of knowledge
- ◆ To provide you with everything you need to acquire a professional mastery of the main tools in this field through the resolution of use cases based on real and frequent situations in the industry. Provide them with everything necessary to acquire a professional mastery of the main tools used in the field through resolving use cases based on real and frequent situations that arise in the industry





## Specific Objectives

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- ◆ Understand and apply specific prediction methods for one or more variables in situations where traditional methods offer problems of a theoretical nature
- ◆ To know the different regression processes used in prediction



*Reach your most demanding goals thanks to a unique program with the most complete theoretical and practical materials on forecasting in today's academic market"*



03

# Structure and Content

The structure and all the didactic resources of this curriculum have been designed by the renowned professionals that make up TECH's team of experts in this area of engineering. These specialists have used their extensive experience and state-of-the-art knowledge to create practical and completely up-to-date content. **All this, based on the most efficient pedagogical methodology, TECH Relearning.**



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*Improve and renew your knowledge of Computational Statistics, thanks to the most innovative teaching materials and a wide variety of additional content available on the Online Campus"*



## Module 1. Advanced Prediction Techniques

- 1.1. General Linear Regression Model
  - 1.1.1. Definition
  - 1.1.2. Properties
  - 1.1.3. Examples:
- 1.2. Partial Least Squares Regression
  - 1.2.1. Definition
  - 1.2.2. Properties
  - 1.2.3. Examples:
- 1.3. Principal Component Regression
  - 1.3.1. Definition
  - 1.3.2. Properties
  - 1.3.3. Examples:
- 1.4. RRR Regression
  - 1.4.1. Definition
  - 1.4.2. Properties
  - 1.4.3. Examples:
- 1.5. Ridge Regression
  - 1.5.1. Definition
  - 1.5.2. Properties
  - 1.5.3. Examples:
- 1.6. Lasso Regression
  - 1.6.1. Definition
  - 1.6.2. Properties
  - 1.6.3. Examples:



- 1.7. Elasticnet Regression
  - 1.7.1. Definition
  - 1.7.2. Properties
  - 1.7.3. Examples:
- 1.8. Non-Linear Prediction Models
  - 1.8.1. Non-Linear Regression Models
  - 1.8.2. Non-Linear Least Squares
  - 1.8.3. Conversion to a Linear Model
- 1.9. Parameter Estimation in a Non-Linear System
  - 1.9.1. Linearization
  - 1.9.2. Other Parameter Estimation Methods
  - 1.9.3. Initial Values
  - 1.9.4. Computer Programs
- 1.10. Statistical Inference in Non-Linear Regression
  - 1.10.1. Statistical Inference in Non-Linear Least Squares Regression
  - 1.10.2. Approximate Inference Validation
  - 1.10.3. Examples:

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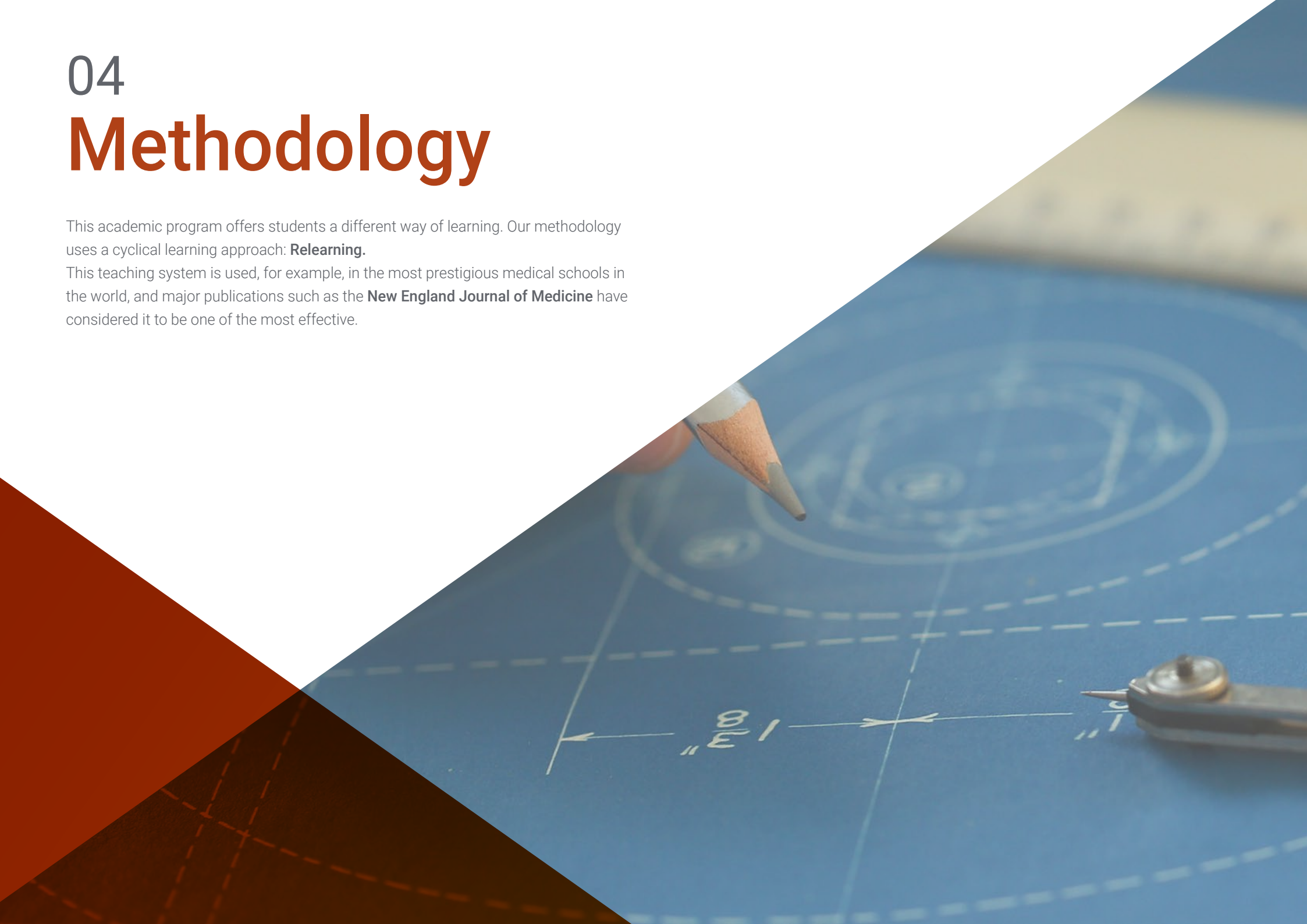
*The most efficient pedagogical methodology, TECH Relearning, will allow you to acquire new knowledge in a precise and natural way, without spending too much time studying"*

04

# 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"*



## 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.

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*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 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 that you are presented with 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.

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 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.





05

# Certificate

The Postgraduate Certificate in Advanced Prediction Techniques 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 Prediction Techniques** 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 Prediction Techniques**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



\*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.

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



## Postgraduate Certificate Advanced Prediction Techniques

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



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