

# Professional Master's Degree

## Medical Research





## Professional Master's Degree Medical Research

Course Modality: Online

Duration: 12 months

Certificate: TECH Technological University

Official N° of hours: 1,500 h.

Website: [www.techtute.com/us/dentistry/professional-master-degree/master-medical-research](http://www.techtute.com/us/dentistry/professional-master-degree/master-medical-research)

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# 01

# Introduction

The discovery of new materials and implants, together with the growing use of technologies such as artificial intelligence or 3D printing, means that dentists have a wide field of action to undertake relevant research in areas such as regenerative dentistry or bioengineering. This demanding task requires continuous updating in research, which is precisely what this program covers. TECH has assembled a team of specialists to compile the most current research tools and methodology, so that dentists can update their knowledge in trials, project financing or dissemination of results in a convenient and agile way. Thanks to its 100% online format, you will be able to distribute the teaching load at your own pace.



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*Bring yourself to date in the modern handling of documentary and bibliographic sources, with a complete tour through advanced bibliographic search, metadata extraction and scientific methodology to be followed"*

With the continuing changes in the eating habits of the population, coupled with a preponderance of ultra-processed products, today's dentists face an unparalleled set of challenges. Gingivitis, periodontitis, dental caries and even oral cancer sadly have become frequent which drives to apply a more thorough process and with greater projection by specialists in this area.

Fortunately, new technologies and medical advances have made it possible to improve dental processes considerably, making research in this field more important than ever. The number of tools available to the dentist, as well as the evolution of the scientific landscape in recent decades, requires constant updating by specialists who wish to devote themselves to Medical Research.

For this reason, TECH Technological University has created the present academic program, with the support of a group of advanced experts and professionals both in the field of Medicine and in research and data collection. Its advanced knowledge provides all the contents with a necessary practical vision, enriching the theory with simulated cases and real examples that contextualize the most advanced research methodology.

Thus, the dentist will delve into the syllabus in the generation of research projects, from its own genesis to the publication of results, through the leadership of working groups or the management of R computer language for data processing. This is a great opportunity to get up to date in Medical Research with the most rigorous and current scientific content.

The format of this Professional Master's Degree is 100% online, which means that all the contents are available on the virtual campus. In addition, these contents can be downloaded from any device with an Internet connection, whether it is a computer or smart phone of choice, with total access to them wherever, whenever and however desired. Thus, the dentists will be able to combine the update involved in this program with their daily work or personal responsibilities, without having to give up any of them.

This **Professional Master's Degree in Medical Research** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ Case studies presented by experts in Health Sciences Research
- ◆ 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 the self-assessment process can be carried out 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



*Delve into the types of clinical trials, protocol generation and various ethical aspects to incorporate them immediately into your own work methodology in the field of research"*

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*Throughout the program you will delve into the creation, financing and publication of research projects, with topics dedicated to biostatistics, generation of scientific reports and data protection"*

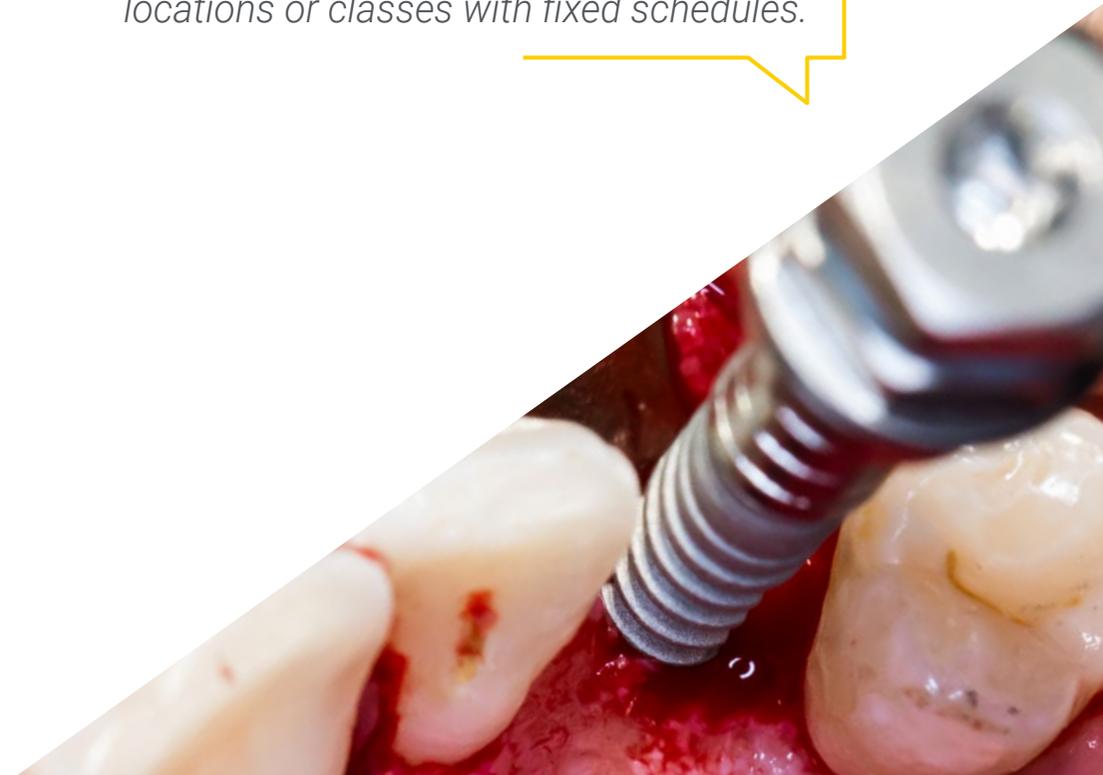
The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

*You will be able to download all the contents, including the extensive library of multimedia resources available in this program, being able to review them from the comfort of your Smartphone or Tablet of choice.*

*You will have full access to the virtual campus 24 hours a day, so you can study the teaching load at your own pace, without the usual pressure of travel to physical locations or classes with fixed schedules.*



# 02 Objectives

Taking into account the relevance of recent research in the field of Dentistry, the objective of this Professional Master's Degree is to provide the most efficient tools, methodology and practice in the field. In this way, the dental professional will be able to update his knowledge based on the most rigorous scientific postulates in Medical Research, having a complete, exhaustive and wide vision of the most relevant Research Projects nowadays.





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*You will meet your most demanding objectives in Medical Research, and delve into the graphical representations and dissemination of results”*



## General Objectives

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- Understand the appropriate approach to a question or problem to be solved
- Assess the state of the art of the problem through literature search
- Assess the feasibility of the potential project
- Study the drafting of a project in accordance with the different calls for proposals
- Examine the search for funding
- Master the necessary data analysis tools
- Writing scientific articles (papers) according to the target magazines
- Generate posters relevant to the units covered
- Know the tools for dissemination to the non-specialized public
- Delve into data protection
- Understand the transfer of knowledge generated to industry or the clinic
- Examine the current use of artificial intelligence and massive data analysis
- Study examples of successful projects



## Specific Objectives

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### **Module 1. The Scientific Method Applied to Health Research. Bibliographic Positioning of the Research**

- Become familiar with the scientific method to carry out health research
- Learn the correct way to ask a question and the methodology to be applied in order to achieve the best possible answer
- Delve into learning how to search for bibliographic methods
- Master all the concepts of scientific activity

### **Module 2. Generation of Working Groups: Collaborative Research**

- Learn how to create working groups
- Create new biomedical research spaces

### **Module 3. Generation of Research Projects**

- Learn how to assess the feasibility of the potential project
- Delve into the essential milestones for writing a research project
- Delve into the criteria for exclusion/inclusion in projects
- Learn how to set up the specific team for each project

### **Module 4. The Clinical Trial in Health Research**

- Recognize the main figures involved in clinical trials
- Learn how to generate protocols
- Documentation management

### **Module 5. Project Financing**

- Have an in-depth knowledge of the sources of funding
- In-depth knowledge of the different calls for proposals

**Module 6. Statistics and R in Health Research**

- ♦ Describe the main concepts of biostatistics
- ♦ Learn how to use the R program
- ♦ Define and understand the regression method and multivariate analysis with R
- ♦ Recognize the concepts of statistics applied to research
- ♦ Describe the statistical techniques of Data Mining
- ♦ Provide knowledge of the most commonly used statistical techniques in biomedical research

**Module 7. Graphical Representations of Data in Health Research and Other Advanced Analysis**

- ♦ Obtain in-depth knowledge of dimensionality reduction methods
- ♦ Delve into the comparison of methods

**Module 8. Dissemination of Results I, Reports, Memos and Scientific Articles**

- ♦ Learn the various ways of disseminating results
- ♦ Internalize how to write reports
- ♦ Learn how to write for a specialized journal

**Module 9. Dissemination of Results II, Symposiums, Congresses, Dissemination to Society**

- ♦ Learn how to generate a poster at a congress
- ♦ Learn how to prepare different communications of different times
- ♦ Learning how to turn a scientific paper into dissemination material

**Module 10. Protection and Transfer of Results**

- ♦ Introduction to the world of results protection
- ♦ Know in depth about patents and similar
- ♦ You will delve into the possibilities of company creation



*With TECH's advanced teaching methodology, you will get the most out of all the hours of study invested in this Professional Master's Degree in Medical Research"*

# 03 Skills

The aforementioned constant evolutions in the field of dentistry make it possible that specialists in this area have highly developed skills, being able to adapt to changes, new techniques and approaches to oral pathologies. Thus, this program also reviews the practical application of Medical Research at the highest level so that the dentists can continue their task of updating in all their facets.



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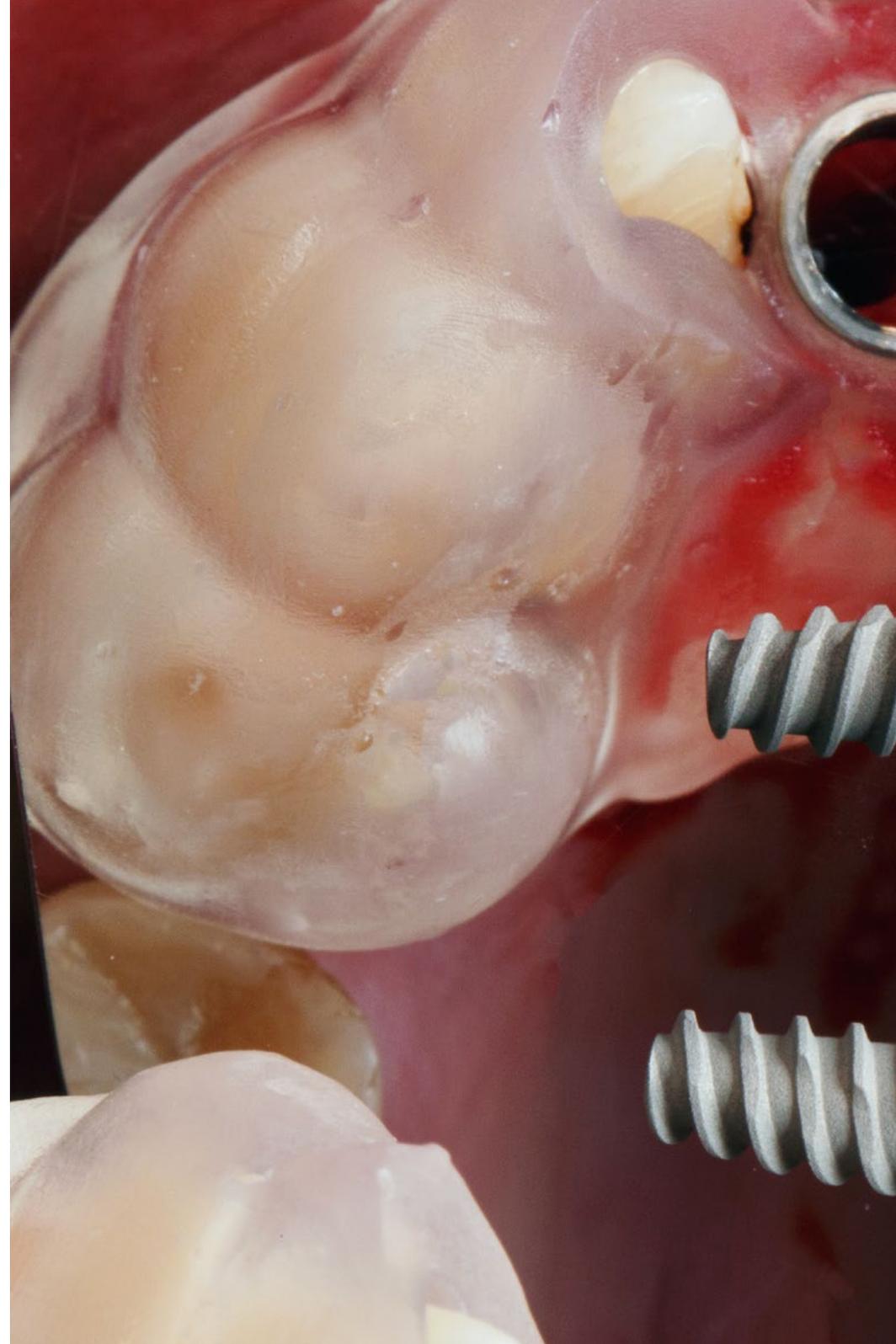
*Optimize your research skills through 10 extensive modules created by experts with years of experience in building and management of analytical work teams"*



## General Skills

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- ♦ Design and write research projects in health sciences
- ♦ Use the information in documentary databases in the field of health sciences for the bibliographic support of a Research Project
- ♦ Generate specific project formats for funding in different calls for proposals
- ♦ Perform the processing of the results obtained with statistical tools, massive data analysis and computational statistics
- ♦ Manage at an advanced user level statistical packages for the treatment of the information collected in research in the field of health sciences
- ♦ Generate graphs from the data obtained in a project
- ♦ Disseminate the results
- ♦ Perform the appropriate protection/transfer of the data generated
- ♦ Make critical and reasoned judgments on the validity and reliability of scientific information in the health field





## Specific Skills

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- ♦ Master the new spaces for health research
- ♦ Manage the different phases of clinical trials
- ♦ Recognize the main figures involved in clinical trials
- ♦ Manage the strategy for participation in international projects
- ♦ Explore regression methods applied to research
- ♦ Master the tools of computational statistics
- ♦ Generate graphs for visual data interpretation of data obtained in research projects
- ♦ Manage scientific reports and articles
- ♦ Disseminate data obtained to non-specialized audiences
- ♦ Learning how to turn a scientific paper into dissemination material
- ♦ Value the results of a research project



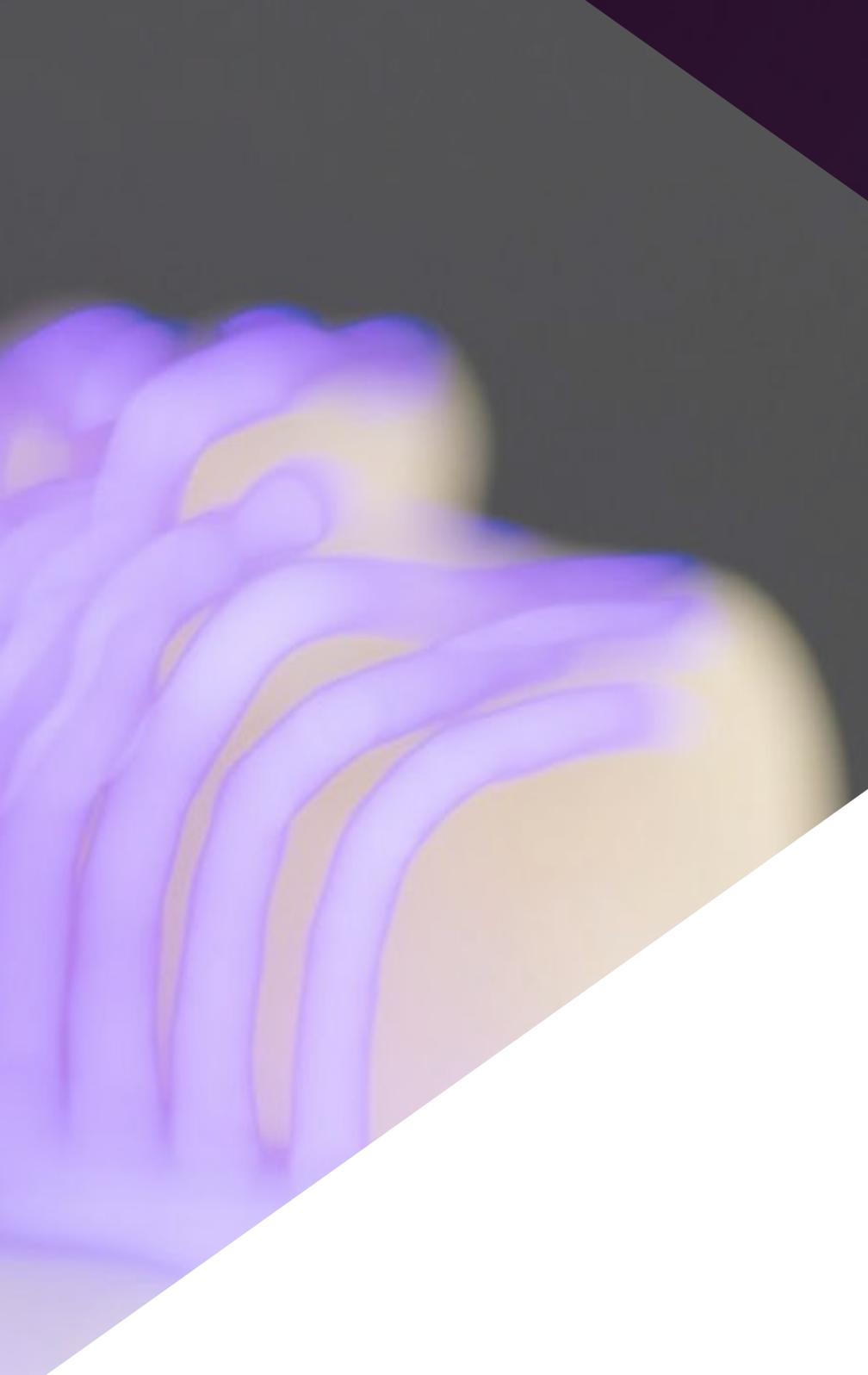
*Incorporate the most advanced methods of Biomedical Research, Data Mining and multivariate analysis into your daily practice"*

# 04

# Course Management

The entire teaching staff in charge of creating this program has been selected by TECH not only for their academic merits, but also for their professional experience leading research teams and managing work groups. This experience gives a much more practical aspect to all the topics covered, as they are written from the faculty's own experiences in the highest level of research.





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*The teaching team has applied all their knowledge and years of experience into the development of the didactic content, giving you a very useful reference guide for your research projects in dentistry”*

## Management



### Dr. López-Collazo, Eduardo

- ♦ Scientific Deputy Director in the Institute for Health Research the Health Research Institute of La Paz University Hospital
- ♦ Head of the Department of Immune Response and Infectious Diseases at IdiPAZ
- ♦ Head of the Department of Immune Response, Tumors and Immunology at IdiPAZ
- ♦ President of the IdiPAZ Research Commission
- ♦ Sponsor of the External Scientific Committee of the Murcian Institute of Health Research
- ♦ Member of the Scientific Commission of FIDE
- ♦ Editor of the international scientific journal "Mediators of Inflammation"
- ♦ Editor of the international scientific journal "Frontiers of Immunology"
- ♦ Coordinator of IdiPAZ Platforms
- ♦ Coordinator of Health Research Funds in the areas of Cancer, Infectious Diseases and HIV
- ♦ PhD in Nuclear Physics, University of La Habana
- ♦ Doctorate in Pharmacy from the Complutense University of Madrid

## Professors

### Dr. Martín Quirós, Alejandro

- ♦ Head for Urgent Pathology of La Paz University Hospital
- ♦ Director of the Urgent and Emergent Pathology Research Group of the Research Institute of the University Hospital La Paz
- ♦ Secretary of the Teaching Commission of the Research Institute of La Paz University Hospital
- ♦ Assistant of Internal Medicine/Infectious Diseases of the High-Level Isolation Unit of the University Hospital La Paz - At Hospital Carlos III
- ♦ Internist at Olympia Quirón Hospital

### Mr. Arnedo Abad, Luis

- ♦ Data & Analyst Manager
- ♦ Data Scientist & Analyst Manager in Industrias Arnedo
- ♦ Data & Analyst Manager in Boustique Perfumes
- ♦ Data Scientist & Analyst Manager in Darecod
- ♦ Postgraduate Certificate in Statistics
- ♦ Psychology Graduate

**Dr. Gómez Campelo, Paloma**

- ◆ Researcher at the Health Research Institute, University Hospital La Paz
- ◆ Deputy Technical Director of the Health Research Institute of La Paz University Hospital
- ◆ Director of the Biobank of the Health Research Institute of the University Hospital La Paz
- ◆ Collaborating Teacher of the Polytechnic University of Catalonia
- ◆ Doctorate in Psychology the Complutense University of Madrid
- ◆ Degree in Psychology from the Complutense University Madrid

**Dr. Pascual Iglesias, Alejandro**

- ◆ Bioinformatics Platform Coordinator, La Paz Hospital
- ◆ Advisor to the COVID-19 Expert Committee of Extremadura
- ◆ Researcher in Eduardo López-Collazo's innate immune response research group, Health Research Institute, University Hospital La Paz
- ◆ Researcher in the coronavirus research group of Luis Enjuanes, National Center of Biotechnology CNB-CSIC
- ◆ Coordinator of Continuing Education in Bioinformatics, Health Research Institute of the University Hospital La Paz
- ◆ Cum Laude Doctor in Molecular Biosciences from the Autonomous University of Madrid
- ◆ Degree in Biology Molecular from the University of Salamanca
- ◆ Professional Master's Degree in Cellular and Molecular Physiopathology and Pharmacology from the University of Salamanca

**Dr. Avendaño Ortiz, José**

- ◆ "Sara Borrell" Researcher Foundation for Biomedical Research of the Ramón y Cajal University Hospital (FIBioHRC/IRyCIS)
- ◆ Researcher Foundation for Biomedical Research of La Paz University Hospital (FIBHULP/ IdiPAZ)
- ◆ Researcher HM Hospitals Foundation (FiHM)
- ◆ Graduate in Biomedical Sciences from the University of Lleida
- ◆ Master's Degree in pharmacological research from the Autonomous University of Madrid
- ◆ PhD in Pharmacology and Physiology from the Autonomous University of Madrid

**Dr. del Fresno, Carlos**

- ◆ Researcher Specialist in Biochemistry, Molecular Biology and Biomedicine
- ◆ "Michael Servetus" Researcher. Group Leader, Research Institute of the Hospital la Paz (IdiPAZ)
- ◆ Researcher Spanish Association Against Cancer (AECC), National Center for Cardiovascular Research (CNIC- ISCIII)
- ◆ Researcher, National Center for Cardiovascular Research (CNIC- ISCIII)
- ◆ "Sara Borrell" Researcher, National Biotechnology Center (CNIC - ISCIII)
- ◆ PhD in Biochemistry, Molecular Biology and Biomedicine, Autonomous University of Madrid
- ◆ Degree in Biology from the Complutense University of Madrid

# 05

# Structure and Content

TECH Technological University elaborates all its programs based on the Relearning pedagogical methodology, which allows a maximum use of all the didactic contents offered. The dentists will review the essential concepts and fundamentals of Medical Research in a repetitive and progressive manner throughout the entire syllabus, resulting in a much more natural and learning experience. All topics are reinforced with detailed videos, interactive summaries and complementary readings that expand the knowledge offered in an enjoyable way.



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*By being able to download all the contents offered on the virtual campus you will be creating a reference guide that will be useful even after you complete your degree”*

## Module 1. The Scientific Method Applied to Health Research. Bibliographic Positioning of the Research

- 1.1. Definition of the Question or Problem to be Solved
- 1.2. Bibliographic Positioning of the Question or Problem to be Solved
  - 1.2.1. Information Search
    - 1.2.1.1. Strategies and Keywords
  - 1.2.2. Pubmed and Other Repositories of Scientific Articles
- 1.3. Treatment of Bibliographic Sources
- 1.4. Treatment of Documentary Sources
- 1.5. Advanced Bibliography Search
- 1.6. Generation of Reference Bases for Multiple Use
- 1.7. Bibliography Managers
- 1.8. Extraction of Metadata in Bibliographic Searches
- 1.9. Definition of the Scientific Methodology to be Followed
  - 1.9.1. Selection of the Necessary Tools
  - 1.9.2. Design of Positive and Negative Controls in an Investigation
- 1.10. Translational Projects and Clinical Trials: Similarities and Differences

## Module 2. Generation of Working Groups: Collaborative Research

- 2.1. Definition of Working Groups
- 2.2. Formation of Multidisciplinary Teams
- 2.3. Optimal Distribution of Responsibilities
- 2.4. Leadership
- 2.5. Control of Activities Achievement
- 2.6. Hospital Research Teams
  - 2.6.1. Clinical Research
  - 2.6.2. Basic Research
  - 2.6.3. Translational Research
- 2.7. Creation of Collaborative Networks for Health Research
- 2.8. New Spaces for Health Research
  - 2.8.1. Thematic Networks
- 2.9. Networked Biomedical Research Centers
- 2.10. Biobanks of Samples International Collaborative Research

## Module 3. Generation of Research Projects

- 3.1. General Structure of a Project
- 3.2. Presentation of Background and Preliminary Data
- 3.3. Definition of the Hypothesis
- 3.4. Definition of General and Specific Objectives
- 3.5. Definition of the Type of Sample, Number and Variables to be Measured
- 3.6. Establishment of the Scientific Methodology
- 3.7. Exclusion/Inclusion Criteria in Projects with Human Samples
- 3.8. Establishment of the Specific Team: Balance and Expertise
- 3.9. Expectations: An Important Element that we Forget
- 3.10. Budget Generation: a fine Tuning Between the Needs and the Reality of the Call
- 3.11. Ethical Aspects

## Module 4. The Clinical Trial in Health Research

- 4.1. Types of Clinical Trials (CT)
  - 4.1.1. Clinical Trials Promoted by the Pharmaceutical Industry
  - 4.1.2. Independent Clinical Trials
  - 4.1.3. Drug Replacement
- 4.2. Phases of CE
- 4.3. Main Figures Involved in CE5
- 4.4. Generation of Protocols
  - 4.4.1. Randomization and Masking
  - 4.4.2. Non-Inferiority Studies
- 4.5. Ethical Aspects
- 4.6. Patient Information Sheet
- 4.7. Informed Consent
- 4.8. Good Clinical Practice Criteria
- 4.9. Drug Research Ethics Committee
- 4.10. Search for Funding for Clinical Trials
  - 4.10.1. Public. Main Spanish, European, Latin American and U.S. Agencies
  - 4.10.2. Private. Main Pharmaceutical Companies

## Module 5. Project Financing

- 5.1. Search for Financing Opportunities
- 5.2. How to Adjust a Project to the Format of a Call for Proposals?
  - 5.2.1. Keys to Success
  - 5.2.2. Positioning, Preparation and Writing
- 5.3. Public Calls for Proposals. Main European and American Agencies
- 5.4. Specific European Calls for Proposals
  - 5.4.1. Horizon 2020 Projects
  - 5.4.2. Human Resources Mobility
  - 5.4.3. Madame Curie Program
- 5.5. Intercontinental Collaboration Calls, Opportunities for International Interaction
- 5.6. Calls for Collaboration with the United States
- 5.7. Strategy for Participation in International Projects
  - 5.7.1. How to Define a Strategy for Participation in International Consortia
  - 5.7.2. Support and Assistance Structures
- 5.8. International Scientific Lobbying
  - 5.8.1. Access and Networking
- 5.9. Private Calls for Proposals
  - 5.9.1. Foundations and Funding Organizations for Health Research in Europe and the Americas
  - 5.9.2. Private Funding Calls for Proposals from U.S. Organizations
- 5.10. Securing the Loyalty of a Funding Source: Keys to Lasting Financial Support

## Module 6. Statistics and R in Health Research

- 6.1. Biostatistics
  - 6.1.1. Introduction to The Scientific Method
  - 6.1.2. Population and Sample. Sampling Measures of Centralization
  - 6.1.3. Discrete Distributions and Continuous Distributions
  - 6.1.4. General Outline of Statistical Inference. Inference about a Normal Population Mean. Inference about a General Population Mean
  - 6.1.5. Introduction to Nonparametric Inference

- 6.2. Introduction to R
  - 6.2.1. Basic Features of the Program
  - 6.2.2. Main Object Types
  - 6.2.3. Simple Examples of Simulation and Statistical Inference
  - 6.2.4. Graphs
  - 6.2.5. Introduction to R Programming
- 6.3. Regression Methods with R
  - 6.3.1. Regression Models
  - 6.3.2. Variable Selection
  - 6.3.3. Model Diagnosis
  - 6.3.4. Treatment of Outliers
  - 6.3.5. Regression Analysis
- 6.4. Multivariate Analysis with R
  - 6.4.1. Description of Multivariate Data
  - 6.4.2. Multivariate Distributions
  - 6.4.3. Dimension Reduction
  - 6.4.4. Unsupervised Classification: Cluster Analysis
  - 6.4.5. Supervised Classification: Discriminant Analysis
- 6.5. Regression Methods for Research with R
  - 6.5.1. Generalized Linear Models (GLM): Poisson Regression and Negative Binomial Regression
  - 6.5.2. Generalized Linear Models (GLM): Logistic and Binomial Regressions
  - 6.5.3. Poisson and Negative Binomial Regression Inflated by Zeros
  - 6.5.4. Local Fits and Generalized Additive Models (GAMs)
  - 6.5.5. Generalized Mixed Models (GLMM) and Generalized Additive Mixed Models (GAMM)
- 6.6. Statistics Applied to Biomedical Research with R I
  - 6.6.1. Basic Notions of R. Variables and Objects in R. Data handling. Files Graphs
  - 6.6.2. Descriptive Statistics and Probability Functions
  - 6.6.3. Programming and Functions in R
  - 6.6.4. Contingency Table Analysis
  - 6.6.5. Basic Inference with Continuous Variables

- 6.7. Statistics Applied to Biomedical Research with R II
  - 6.7.1. Analysis of Variance
  - 6.7.2. Correlation Analysis
  - 6.7.3. Simple Linear Regression
  - 6.7.4. Multiple Linear Regression
  - 6.7.5. Logistic Regression
- 6.8. Statistics Applied to Biomedical Research with R III
  - 6.8.1. Confounding Variables and Interactions
  - 6.8.2. Construction of a Logistic Regression Model
  - 6.8.3. Survival Analysis
  - 6.8.4. Cox Regression
  - 6.8.5. Predictive Models. ROC Curve Analysis
- 6.9. Statistical Data Mining Techniques with R I
  - 6.9.1. Introduction. Data Mining. Supervised and Unsupervised Learning. Predictive Models. Classification and Regression
  - 6.9.2. Descriptive Analysis. Data Pre-Processing
  - 6.9.3. Principal Component Analysis (PCA)
  - 6.9.4. Cluster Analysis. Hierarchical Methods. K-Means
- 6.10. Statistical Data Mining Techniques with R II
  - 6.10.1. Model Assessment Measures. Predictive Ability Measures. ROC Curves
  - 6.10.2. Models Assessment Techniques. Cross-Validation. Bootstrap Samples
  - 6.10.3. Tree-Based Methods (CART)
  - 6.10.4. Support Vector Machines (SVM)
  - 6.10.5. Random Forest (RF) and Neural Networks (NN)

## Module 7. Graphical Representations of Data in Health Research and Other Advanced Analysis

- 7.1. Types of Graphs
- 7.2. Survival Analysis
- 7.3. ROC Curves
- 7.4. Multivariate Analysis (Types of Multiple Regression)
- 7.5. Binary Regression Models
- 7.6. Massive Data Analysis
- 7.7. Dimensionality Reduction Methods
- 7.8. Comparison of Methods: PCA, PPCA and KPCA
- 7.9. T-SNE (t-Distributed Stochastic Neighbor Embedding)
- 7.10. UMAP (Uniform Manifold Approximation and Projection)

## Module 8. Dissemination of Results I, Reports, Memos and Scientific Articles

- 8.1. Generating a Scientific Report or Memory of a Project
  - 8.1.1. Optimal Approach to the Discussion
  - 8.1.2. Presentation of the Limitations
- 8.2. Generation of a Scientific Article: How to Write a Paper on the Basis of the Data Obtained?
  - 8.2.1. General Structure
  - 8.2.2. Where Does the Paper Go?
- 8.3. Where to Start?
  - 8.3.1. Adequate Representation of the Results
- 8.4. Introduction: The Mistake of Starting with this Section
- 8.5. Discussion: The Cusp Moment
- 8.6. The Description of Materials and Methods: The Guaranteed Reproducibility
- 8.7. Choice of the Journal where the Paper is to be submitted
  - 8.7.1. Choice Strategy
  - 8.7.2. Priority List
- 8.8. Adaptation of the Manuscript to the Different Formats
- 8.9. The "Cover Letter": Concise Presentation of the Study to the Editor
- 8.10. How to Respond to Reviewers' Doubts? The Rebuttal Letter

## Module 9. Dissemination of Results II, Symposiums, Congresses, Dissemination to the Society

- 9.1. Presentation of Results at Congresses and Symposia
  - 9.1.1. How is a Poster Generated?
  - 9.1.2. Data Representation
  - 9.1.3. Focusing the Message
- 9.2. Short Communications
  - 9.2.1. Data Representation for Short Communications
  - 9.2.2. Focusing the Message
- 9.3. The Plenary Lecture: Notes on How to Keep the Attention of the Specialized Audience for More than 20 Minutes
- 9.4. Dissemination to the General Public
  - 9.4.1. Need Vs. Opportunity
  - 9.4.2. Use of References
- 9.5. Use of Social Networks for the Dissemination of Results
- 9.6. How to Adapt Scientific Data to the Popular Language?
- 9.7. Hints for Summarizing a Scientific Paper in a Few Characters
  - 9.7.1. Instant Dissemination via Twitter
- 9.8. How to turn a Scientific Paper into a Popularization Material
  - 9.8.1. Podcast
  - 9.8.2. YouTube Videos
  - 9.8.3. Tik Tok
  - 9.8.4. Comic Book
- 9.9. Popular Literature
  - 9.9.1. Columns
  - 9.9.2. Books

## Module 10. Protection and Transfer of Results

- 10.1. Protection of Results: General Aspects
- 10.2. Valorization of the Results of a Research Project
- 10.3. Patents: Pros and Cons
- 10.4. Other Forms of Protection of Results
- 10.5. Transfer of Results to Clinical Practice
- 10.6. Transfer of Results to Industry
- 10.7. The Technology Transfer Contract
- 10.8. Trade Secrets
- 10.9. Generation of Companies Spin-Off from a Research Project
- 10.10. Search for Investment Opportunities in companies Spin-Off



*The numerous self-knowledge exercises and evaluation tests will help you to follow your progress and consolidate all the theoretical contents of this Professional Master's Degree"*

06

# 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.





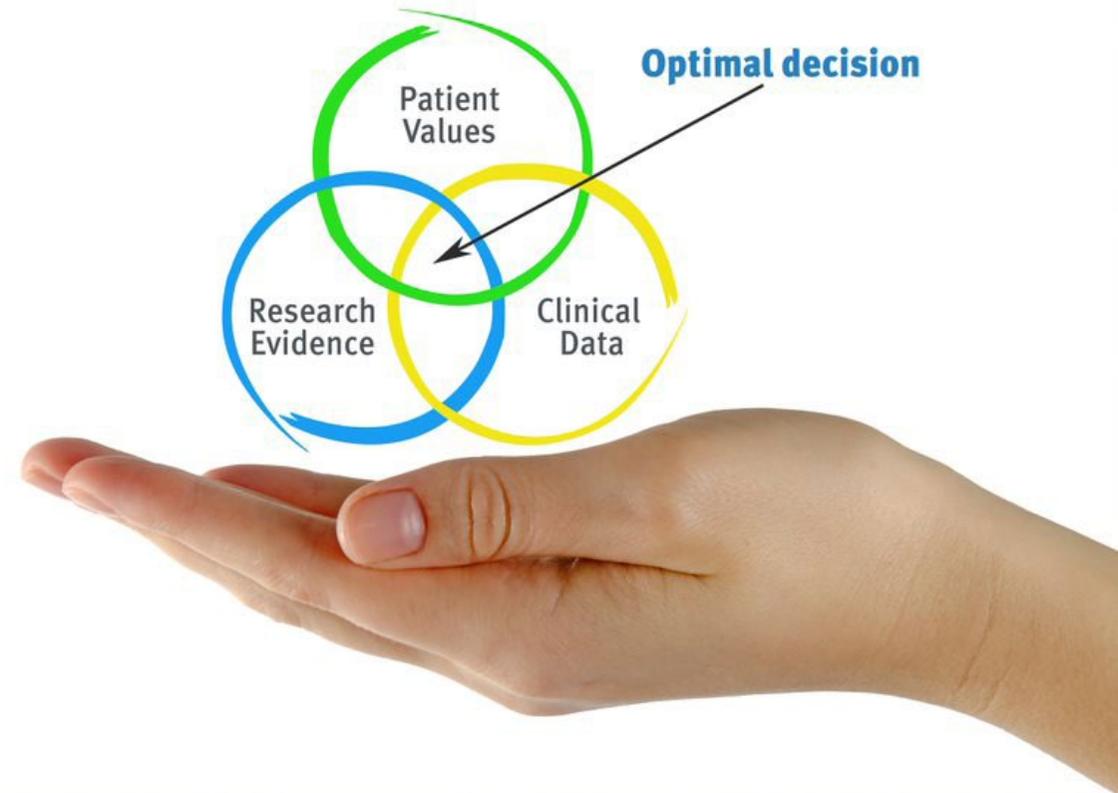
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH we use the Case Method

In a given situation, what should a professional do? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the dentist's professional practice.

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*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”*

The effectiveness of the method is justified by four fundamental achievements:

1. Dentists who follow this method not only grasp concepts, but also develop their mental capacity by means of exercises to evaluate real situations and apply their knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



## Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

*The student will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology we have trained more than 115,000 dentists with unprecedented success, in all specialties regardless of the workload. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

*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.*

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.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



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.



### Educational Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances, and to the forefront of medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



### Interactive Summaries

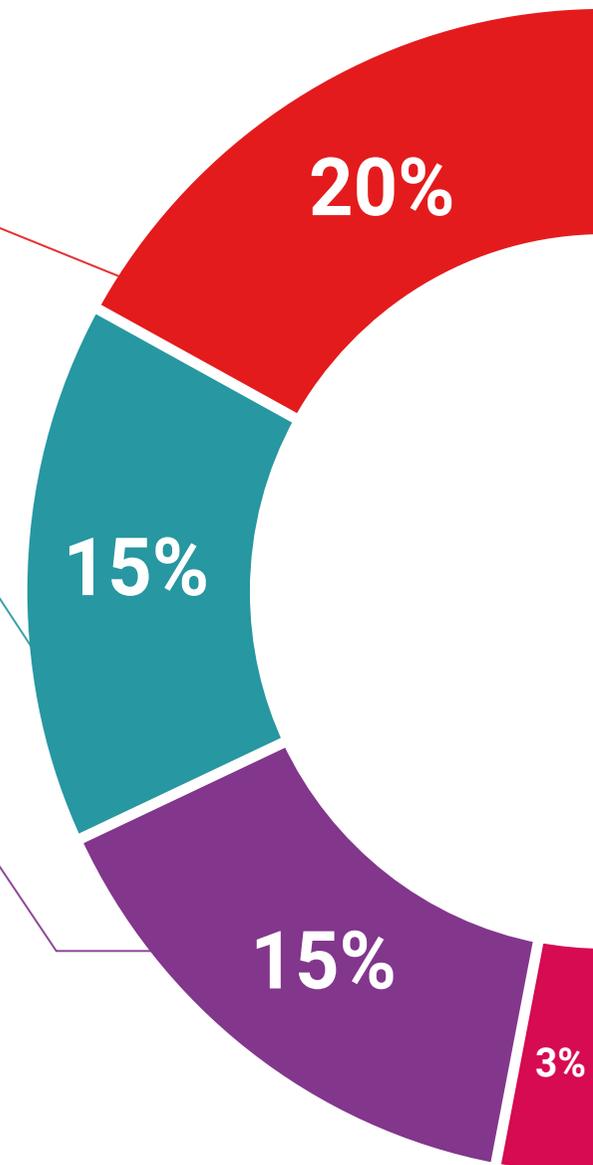
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

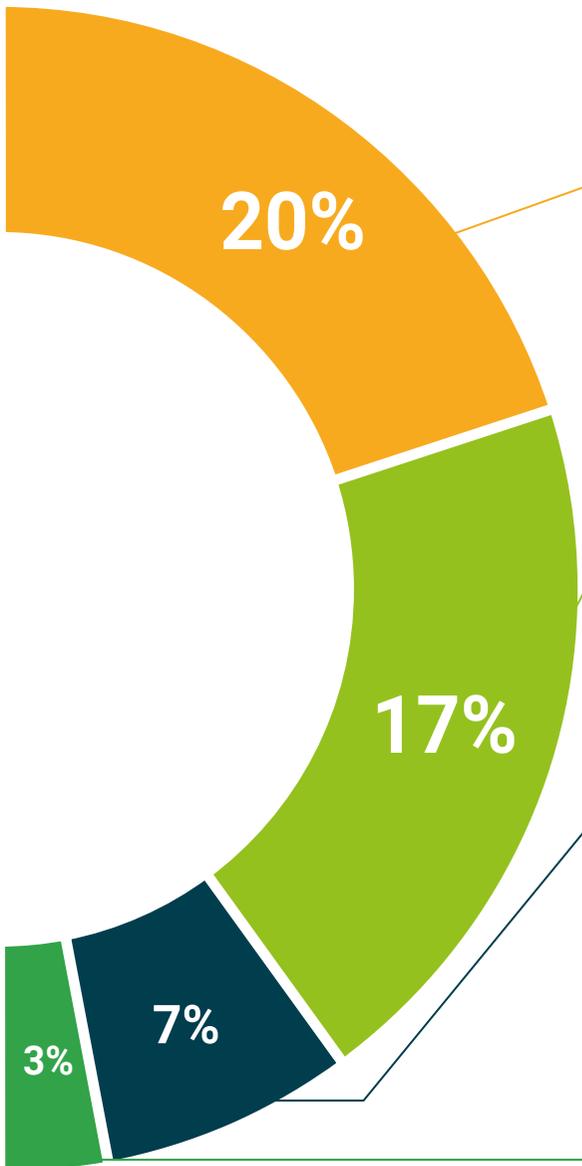
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



### 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.





**Expert-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



**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.



**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.



**Quick Action Guides**

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



07

# Certificate

The Professional Master's Degree in Medical Research guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree issued by TECH Technological University.





“

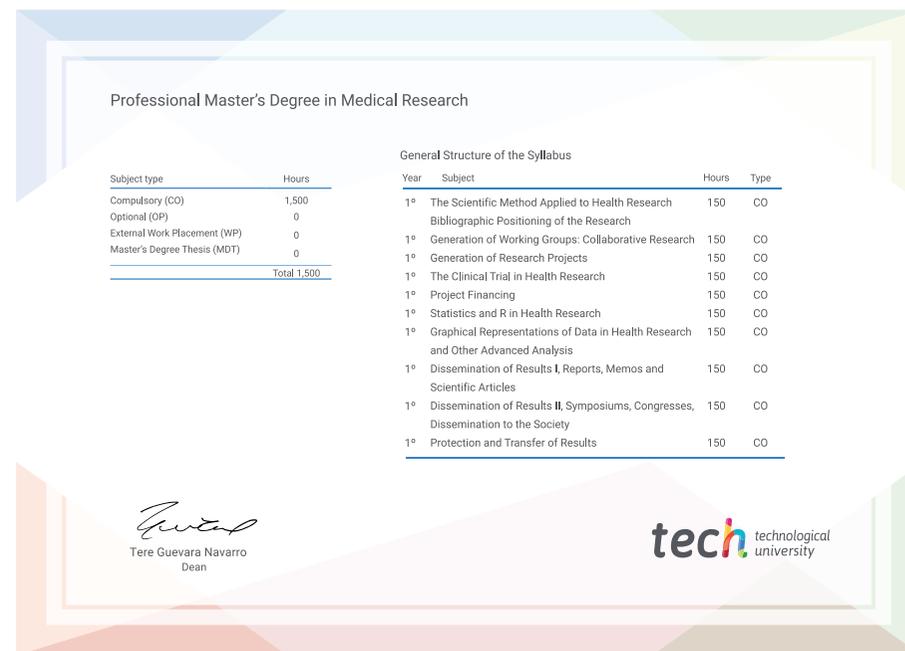
*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

This **Professional Master's Degree in Medical Research** 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 **Professional Master's Degree** issued by **TECH Technological University** via tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Professional Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Professional Master's Degree in Medical Research**  
 Official N° of hours: **1,500 h.**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION 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 quality  
development language  
virtual classroom



## Professional Master's Degree

Medical Research

Course Modality: Online

Duration: 12 months

Certificate: TECH Technological University

Official N° of hours: 1,500 h.

# Professional Master's Degree

## Medical Research