

# Professional Master's Degree

## Medical Research



## Professional Master's Degree Medical Research

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Technological University
- » Schedule: at your own pace
- » Exams: online

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

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# 01

# Introduction

Medicines have been developed thanks to numerous studies by specialists in the sector who have been equipped with the Data to know the adverse effects on individuals, as well as the biological response to the medicine. In this way, pharmaceutical companies focus on health problems in the population and the implementation of these services in order to alleviate the pathologies of those affected. To promote scientific evolution in this area, TECH has developed a program to teach professionals about epidemiology and quality protocols that maximize medicine effectiveness. All this through a 100% online program that allows students to adapt the pace of study to their needs.



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*Thanks to this Professional Master's Degree you will develop your own research projects and gain the specific knowledge in pharmacy to take part in collaborative work"*

During the pandemic, scientists had to conduct multiple trials worldwide to obtain the vaccine against COVID. Medical research played a key role in these processes. However, its development was made possible by technological advances, such as *Big Data*. The study of information makes it possible to screen drugs for their ultimate application in patients.

It is a living discipline that is constantly changing and cooperating with other sciences in its development. Drug viability is directly related to the financing of research projects. For this reason, the medical sector requests greater investment from the different countries and, in addition, specialists who have up-to-date technological knowledge that can speed up the processes, and thus reduce the cost of the studies. In this sense, TECH has developed a program designed for graduates in pharmacy and other professionals in the field who are interested in updating their skills in accordance with the scientific methodology applied to health research.

This Professional Master's Degree in Medical Research is 100% online, to offer students great flexibility and provide them with possibilities to study and develop other aspects of their lives simultaneously. In addition, TECH has incorporated the innovative Relearning methodology, so that students can learn without investing long hours of memorization. In this way, specialists will be able to assimilate all the knowledge on clinical trials, statistics and R applied to research and dissemination of results, among other aspects. A key program for updating professionals that will improve their theoretical and practical wish.

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 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



*Thanks to TECH, you will stand out as a professional in a changing labor market that increasingly demands higher scientific qualifications"*

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*Be part of the evolution in Medical Research and get to know the new spaces for studies and collaborative networks in health sciences”*

The program includes, in its teaching staff, professionals from the sector who bring to this program the experience of their work, in addition to recognized specialists from prestigious reference societies and universities.

Its multimedia content, developed with the latest educational technology, will allow professionals to learn in a professional a situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to prepare in real situations.

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

*Sample biobanks are key in the pharmaceutical sector to establish quality and order criteria. Master the Network work teams, thanks to TECH.*

*Boost your career by developing research projects that promote modern medicine.*



# 02 Objectives

The Professional Master's Degree in Medical Research aims to update health care professionals in the study methods, AI techniques and effective tools that promote their specialization. The program is developed during 12 months so that students gain rigorous knowledge about clinical trials, through a dynamic and enriching learning. In turn, TECH offers audiovisual materials in various formats so that specialists can obtain the most out of the qualification. In this way, they will be able to study to the contents and apply the advice of the teachers in the real scenario of action.





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*Pay attention to the exclusion and inclusion criteria in projects with human samples so that you can bring all your professional quality to your own and collaborative research projects"*



## 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
- ◆ Write scientific articles (papers) for the daily magazines
- ◆ Generate posters relevant to the topics addressed
- ◆ 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 a health research
- ◆ Learn the correct way to ask a question and the methodology to follow 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
- ◆ Permanent collaboration with other research areas

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

- ◆ Learn how to assess the feasibility of the potential project
- ◆ Know in depth 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
- ◆ Maintain a good 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
- ◆ Prepare a quote to know the total price of the research

**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**

- ◆ Master the tools of computational statistics
- ◆ Learn to generate graphs for the visual interpretation of data obtained in research project
- ◆ Gain in-depth knowledge of dimensionality reduction methods
- ◆ Delve into the comparison of methods

**Module 8. Dissemination of Results I, Reports, Memories 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 the 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
- ◆ Delve into the possibilities of company creation

“Achieve your objectives thanks to efficient pedagogical tools and base your medical performance on the most up-to-date health knowledge”

# 03 Skills

From the first module of the 10 that make up this program, TECH seeks to perfect the health skills of the specialists. It also focuses on the bibliographic positioning of research in this area so that professionals use strategies and keywords to increase the value of their translational projects. Furthermore, upon completion of the 12-month academic program, students will be able to design and write specific information, equipping themselves with documentary resources and mastering metadata extraction in bibliographic searches.





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*Would you like to be the leader of the research teams of a pharmacological project? Thanks to TECH, you will be qualified in leadership and the optimal distribution of responsibilities"*



## 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
- ◆ 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
- ◆ Manage the strategy for participation in international projects
- ◆ Generate specific project formats for funding in different calls for proposals
- ◆ Explore regression methods applied to research
- ◆ Master the tools of computational statistics
- ◆ Generate graphs for the visual interpretation of data obtained in research project
- ◆ Manage scientific reports and articles
- ◆ Disseminate data obtained to non-specialized audiences
- ◆ Value the results of a research project



*Don't wait any longer: investigate now the structure of scientific studies to establish the appropriate methodology in each case and exceed initial expectations"*

# 04

# Course Management

TECH has called on an expert teaching team in Health Sciences, which has developed and will be in charge of teaching all the contents of the program.

Thanks to the extensive experience of the teaching team, students will not only enjoy a theoretical syllabus, but will also be able to adopt the action protocols of the experts themselves, which have been based on the health care scenario. In addition, the specialists will have a direct communication channel through the Virtual Campus through which they will be able to discuss, ask and resolve all their questions about the study. A unique opportunity for the specific development of pharmacy graduates who wish to dedicate themselves to the field of research.







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*Lean on a teaching team specialized in EC5 phases to increase your skills in clinical trials in public and private companies"*

## 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 Inmune Response and Infectious Diseases at IdiPAZ
- ♦ Head of the Department of Inmune 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

### Mr. Arnedo Abade, 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. Martín Quirós, Alejandro

- ◆ Head of the Urgent and Emergent Pathology Research Group of the Research Institute of the Hospital Universitario La Paz.
- ◆ Secretary of the Teaching Commission of the La Paz University Hospital Research Institute.
- ◆ Assistant of the Emergency Department of the Hospital Universitario de la Paz.
- ◆ Assistant of Internal Medicine/Infectious Diseases of the High Level Isolation Unit of the Hospital Universitario La Paz-Hospital Carlos III
- ◆ Internist at Hospital Olympia Quirón

### Dr. Gómez Campelo, Paloma

- ◆ Researcher at the Instituto de Investigación Sanitaria, Hospital Universitario 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. 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

### 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. 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, Instituto de Investigación Sanitarias 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 Universidad of Salamanca





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*A unique, key, and decisive learning experience to boost your professional development”*

05

# Structure and Content

The content of this Master's Degree in Medical Research has been developed so that specialists can learn through innovative teaching tools and move away from conventional studies. One of the most outstanding tools is the *Relearning* methodology, which makes it possible to follow the syllabus and assimilate it without having to spend long hours memorizing it. In this way, TECH seeks to guide professionals so that they can combine this program with other fields of their personal and professional lives.



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*It has audiovisual materials in various formats and a reference guide that you can download to have the contents on your electronic device upon completion of the program”*

## 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. Pubmed and Other Repositories of Scientific Articles
    - 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. Ethical aspects and Expectations: an Important Element that we Forget
- 3.10. Budget Generation: a Fine Tuning Between the Needs and the Reality of the Call

### 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 CT
- 4.3. Main Figures Involved in CT5
- 4.4. Generation of Protocols
  - 4.4.1. Randomization and Masking
  - 4.4.2. Non-Inferiority Studies
- 4.5. Patient Information Sheet
- 4.6. Informed Consent
- 4.7. Good Clinical Practice Criteria
- 4.8. Drug Research Ethics Committee
- 4.9. Search for Funding for Clinical Trials
  - 4.9.1. Public. Main Spanish, European, Latin American and U.S. Agencies
  - 4.9.2. 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
  - 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 Evaluation 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, Memories 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. The Introduction: The Mistake of Starting with this Section.
- 8.5. The 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: Symposia, Congresses, Dissemination to 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 Dissemination Material
  - 9.8.1. Podcast
  - 9.8.2. YouTube Videos
  - 9.8.3. Tik Tok
  - 9.8.4. Comics
- 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. Spin-Off Company Generation Based on Research Projects
- 10.10. Investment Opportunity Search in Spin-Off Companies





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*A syllabus suited to the current digital paradigm with which you will not neglect other aspects of your life, whether personal or professional”*

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

What should a professional do in a given situation? Throughout the program, students will be confronted with multiple simulated clinical cases based on real patients, in which they will have to investigate, establish hypotheses and ultimately, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Pharmacists learn better, more quickly 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. Gervas, 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, attempting to recreate the actual conditions in a pharmacist'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. Pharmacists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying 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.

Our 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, which represent a real revolution with respect to simply studying and analyzing cases.

*Pharmacists 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, more than 115,000 pharmacists have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. This pedagogical methodology is developed in a highly demanding environment, with a university student body with a high socioeconomic 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 specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to 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 created specifically for the course by specialist pharmacists who will be teaching the course, so that the didactic development is highly specific and accurate.

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.



### Video Techniques and Procedures

TECH introduces students to the latest techniques, to the latest educational advances, to the forefront of current pharmaceutical care procedures. All of this, first hand, and explained and detailed with precision to contribute to assimilation and a better understanding. And best of all, you can watch them as many times as you want.



### Interactive Summaries

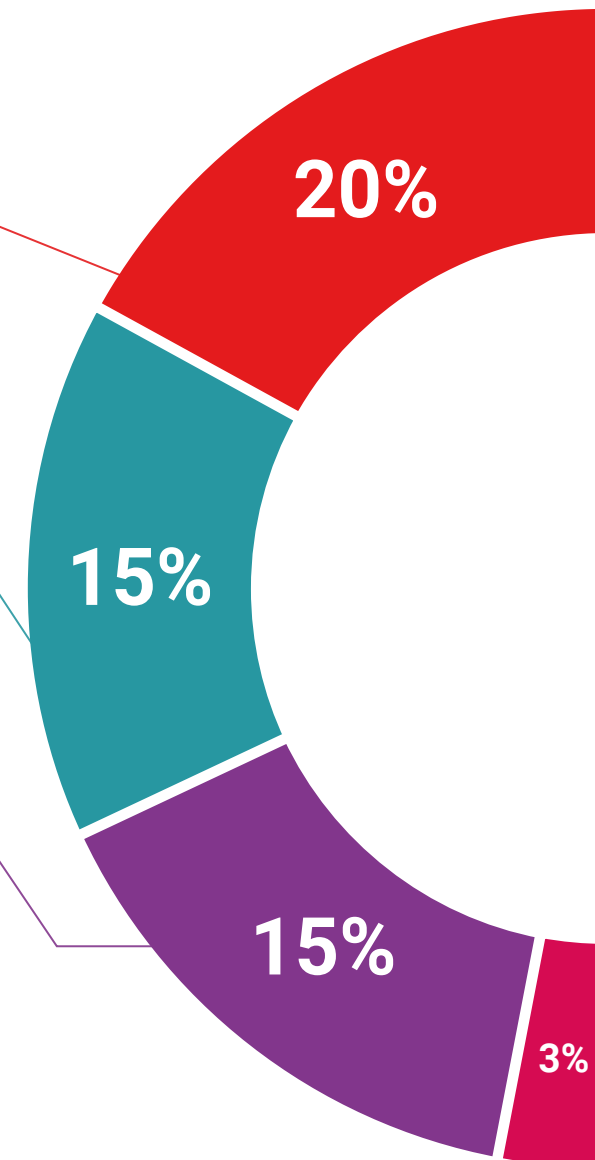
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

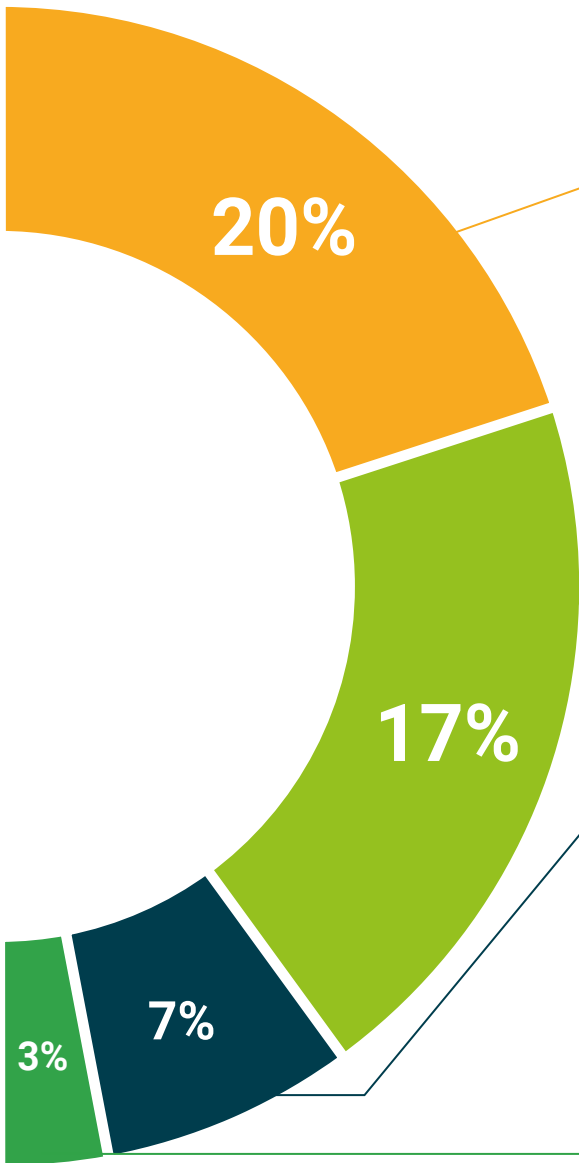
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



### 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, we will present you with real case developments in which the expert will guide you through 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 on the usefulness of learning by observing experts. The system known as 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 certificate 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 program on the market.

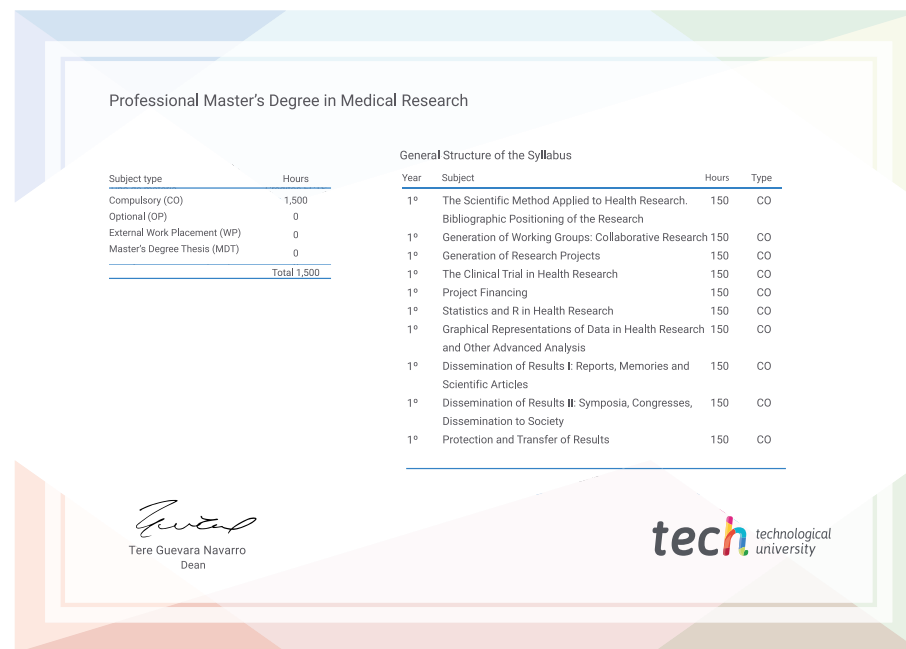
After the student has passed the assessments, they will receive their corresponding Professional Master's Degree issued by **TECH Technological University** via tracked delivery\*.

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**

Modality: **online**

Duration: **12 months**



\*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.



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institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development language  
virtual classroom



**Professional Master's  
Degree**  
Medical Research

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Technological University
- » Schedule: at your own pace
- » Exams: online

# Professional Master's Degree

## Medical Research