Professional Master's Degree

E-Health and Big Data

tech technological university

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Professional Master's Degree
E-Health and Big Data

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/pk/information-technology/professional-master-degree/master-e-health-big-data

Index

01 Introduction p. 4

02 Objectives p. 8

03 Skills p. 14

04 Course Management p. 18

05 Structure and Content p. 22

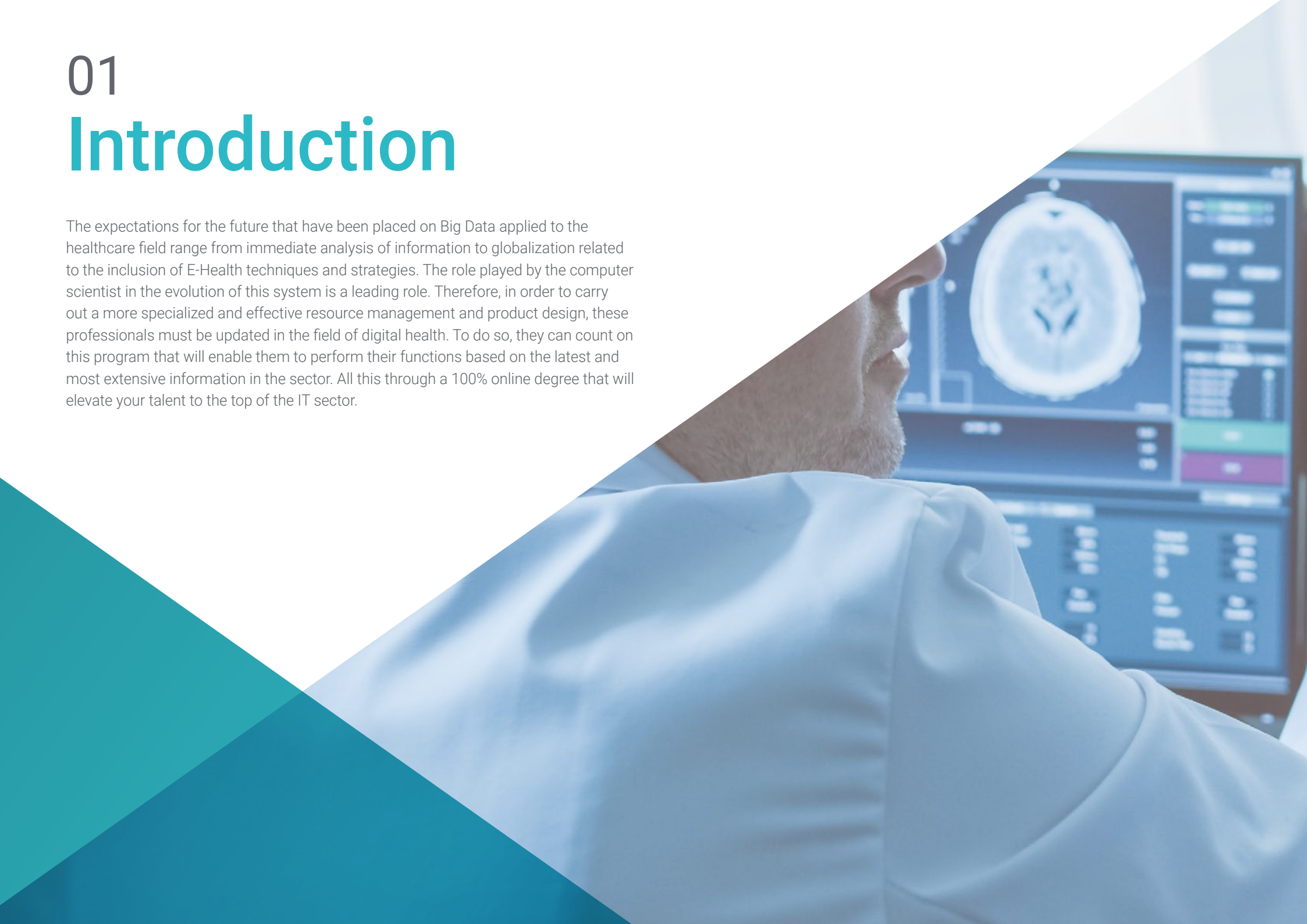
06 Methodology p. 36

07 Certificate p. 44

01

Introduction

The expectations for the future that have been placed on Big Data applied to the healthcare field range from immediate analysis of information to globalization related to the inclusion of E-Health techniques and strategies. The role played by the computer scientist in the evolution of this system is a leading role. Therefore, in order to carry out a more specialized and effective resource management and product design, these professionals must be updated in the field of digital health. To do so, they can count on this program that will enable them to perform their functions based on the latest and most extensive information in the sector. All this through a 100% online degree that will elevate your talent to the top of the IT sector.



Would you like to specialize in the field of IT applied to E-Health and Big Data? Enroll in this Master's Degree and embark on the path to a successful working future"

Access to more personalized healthcare, tailored to the needs of society and healthcare professionals, is becoming an ever closer reality thanks to the development of E-Health and the application of Big Data in the storage and analysis of information obtained in hospitals, doctors' offices and clinics. This is due, to a greater extent, to the significant leap made by the Internet and digital technologies, favoring connectivity and globalization through increasingly complex, specific and specialized systems.

Today it is possible to monitor patients' vital signs remotely, as well as to treat certain pathologies through virtual reality, all thanks to the work of thousands of computer scientists and engineers who have used their time and talent to create strategies and techniques that have undoubtedly considerably improved healthcare management. For this reason, and in view of the great expectations for the future in this field, TECH Technological University has considered it necessary to develop a program through which professionals can learn about this field in detail.

In this way the Professional Master's Degree in E-Health and Big Data arises, focused on the IT sector, a complete and comprehensive degree that will allow professionals to specialize in this field in just twelve months through 1,500 hours of the best theoretical and practical training. This is an academic experience with which they will be able to delve into aspects such as bioinformatics computing, the requirements to develop tools for molecular medicine and pathology diagnosis, the creation of biomedical databases or massive information processing.

All this in a 100% online way, from wherever they want and without predefined schedules. This program also includes diverse supplementary material with which students will be able to deepen in a personalized way in the aspects of the syllabus that they consider most important for their work performance. The extensive knowledge of the needs and demands of the health sector will allow them to develop tools and software adapted to the demand, so that the program of this Professional Master's Degree will become the vehicle that will lead them to professional success.

This **Professional Master's Degree in E-Health and Big Data** 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 information and communication technologies focused on the healthcare environment
- 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.

Knowing in detail the needs of molecular medicine and pathology diagnostics will allow you to work on the development of specialized strategies and software for E-Health"

The healthcare sector is increasingly demanding and requiring a qualitative and quantitative leap in E-Health strategies. That is why this program will open many doors for you in the labor market"

You will be able to delve into the latest aspects of bioinformatics computing through an extensive knowledge of the best search engines and networks.

Do you want to become a reference in the creation and management of biomedical databases? Opt for this Professional Master's Degree and start working on it.

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 allow professionals to learn in a contextual and situated learning environment, 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 must try to solve the different professional practice situations that are presented to them throughout the academic year. For this purpose students will be assisted by an innovative interactive video system developed by renowned experts.

02

Objectives

Thanks to the time and demanding quality criteria that have been applied in the development of this program, TECH Technological University can offer with full guarantee a comprehensive, innovative and dynamic degree, through which graduates will be able to achieve even their most ambitious goals within the E-Health and Big Data sector. This is because the purpose of this program is to provide them with all the information they need to develop as specialists versed in this field in just twelve months.

TECH Technological University designs each of its degrees with the needs of the graduate and the demand of the sector in mind. Thanks to this, it is possible to offer training that will undoubtedly lead to professional success"

General Objectives

- Develop key concepts of medicine that serve as a vehicle in understanding clinical medicine
- Determine the major diseases affecting the human body classified by apparatus or systems, structuring each module into a clear outline of pathophysiology, diagnosis, and treatment
- Determine how to obtain metrics and tools for healthcare management
- Understand the basics of basic and translational scientific methodology
- Examine the ethical and best practice principles governing the different types of research in health sciences
- Identify and generate the means of funding, assessing and disseminating scientific research
- Identify the real clinical applications of the various techniques
- Develop the key concepts of computational science and theory
- Determine the applications of computation and its implication in bioinformatics
- Provide the necessary resources to practically apply all the concepts in the modules
- Develop the fundamental concepts of databases
- Determine the importance of medical databases
- Delve into the most important techniques in research
- Identify the opportunities offered by the IoT in the field of e-Health
- Provide specialized knowledge of the technologies and methodologies used in the design, development and assessment of telemedicine systems
- Determine the different types and applications of telemedicine
- Delve into the most common ethical aspects and regulatory frameworks of telemedicine
- Analyze the use of medical devices
- Develop the key concepts of entrepreneurship and innovation in e-Health
- Determine what a business model is and the types that exist
- Collect e-Health success stories and mistakes to avoid
- Apply the knowledge acquired to your own business idea

You are just twelve months away from achieving excellence in the IT sector through a degree that will elevate your talent to the pinnacle of E-Health and Big Data"

Specific Objectives

Module 1. Molecular Medicine and Pathology Diagnosis

- Understand the diseases of the circulatory and respiratory systems
- Determine the general pathology of the digestive and urinary systems, the general pathology of the endocrine and metabolic systems and the general pathology of the nervous system.
- Generate expertise in diseases affecting the blood and the locomotor system

Module 2. Health system Management and Administration in Health Centers

- Determine what a health system is
- Analyze the different healthcare models in Europe
- Examine how the healthcare market functions
- Develop key knowledge of hospital design and architecture
- Generate specialized knowledge of health measures
- Delve into resource allocation methods
- Compile productivity management methods
- Establish the role played by *Project Managers*

Module 3. Research in Health Sciences

- Determine the need for scientific research
- Interpret scientific methodology
- Specify the need for types of research in health sciences, each in their context
- Establish the principles of evidence-based medicine
- Examine the needs to interpret scientific results
- Develop and interpret the basics of clinical trials
- Examine the methodology used to disseminate scientific research results and the ethical and legislative principles that govern it

Module 4. Techniques, Recognition and Intervention using Biomedical Imaging

- Examine the fundamentals of medical imaging technologies
- Develop expertise in radiology, clinical applications and physical fundamentals
- Analyze ultrasound, clinical applications and physical fundamentals
- In-depth study of tomography, computed and emission tomography, clinical applications and physical fundamentals
- Determine how to manage magnetic resonance imaging, clinical applications and physical fundamentals
- Generate advanced knowledge of nuclear medicine, differences between PET and SPECT, clinical applications and physical fundamentals
- Discriminate noise in the image, reasons for it and image processing techniques to reduce it
- Present image segmentation technologies and explain their usefulness
- Gain a deeper understanding of the direct relationship between surgical interventions and imaging techniques
- Establish the possibilities offered by artificial intelligence in recognizing patterns in medical images, and thus deepen innovation in the field

Module 5. Computation in Bioinformatics

- Understand the concept of computation
- Break down a computer system into its various parts
- Distinguish between the concepts of computational biology and bioinformatics computing
- Master the most commonly used tools in the field
- Determine future trends in computing
- Analyze biomedical datasets using Big Data techniques

Module 6. Biomedical Databases

- Understand the concept of biomedical information databases
- Examine the different types of biomedical information databases
- Study data analysis methods in depth
- Compile models that are useful in predicting outcomes
- Analyze patient data and organize it logically
- Report on large amounts of information
- Determine the main lines of research and testing
- Utilize tools for bioprocess engineering

Module 7. Big Data in Medicine: Massive Medical Data Processing

- Gain specialized knowledge of massive data acquisition techniques in biomedicine
- Analyze the importance of data preprocessing in Big Data
- Determine the differences that exist between the data of the different techniques of massive data collection, as well as their special characteristics in terms of preprocessing and processing.
- Provide ways of interpreting results from massive data analysis
- Examine the applications and future trends in the field of Big Data in biomedical research and public health

Module 8. Applications of Artificial Intelligence and the Internet of Things (IoT) in Telemedicine

- Propose communication protocols in different scenarios in the healthcare field
- Analyze IoT communication, as well as its application areas in e-Health
- Substantiate the complexity of artificial intelligence models in its use in healthcare
- Identify the optimization brought by parallelization in GPU-accelerated applications and its use in healthcare
- Present all the *Cloud* technologies available to implement e-Health and the IoT products, both in computing and communication

Module 9. Telemedicine and Medical, Surgical and Biomechanical Devices

- Analyze the evolution of telemedicine
- Assess the benefits and limitations of telemedicine
- Examine the different types, use and clinical benefits of telemedicine
- Assess the most common ethical aspects and regulatory frameworks for the use of telemedicine.
- Establish the use of medical devices in healthcare in general and in telemedicine specifically
- Determine the use of the Internet and the medical resources it provides
- Delve into the main trends and future challenges in telemedicine

Module 10. Business Innovation and Entrepreneurship in E-Health

- Analyze the e-Health market in a systematic and structured way
- Learn the key concepts of innovative ecosystems
- Create businesses using the *Lean Startup* methodology
- Analyze the market and competitors
- Find a solid value proposition in the marketplace
- Identify opportunities and minimize rates of error
- Handle the practical tools for environment analysis and practical tools to quickly test and validate your idea.

03

Skills

Among TECH's Technological University's priorities with each of its degrees is to ensure that graduates can achieve the improvement of their skills with the same program. Therefore, with this Professional Master's Degree, professionals will work on improving their skills related to massive data processing, bioinformatics computing or applications of artificial intelligence in telemedicine. In this way, they will be able to become highly qualified specialists to enter the job market and take on the management of a large project related to E-Health and Big Data.

A program designed to ensure that you perfect your skills in the massive processing of medical data and bioinformatics computing"

General Skills

- Learn to analyze the functioning of the international health care system and common medical processes
- Acquire an analytical and critical view of medical devices
- Obtain skills to examine the principles of medical imaging and its applications
- Properly analyze the challenges and threats of imaging and how to overcome them
- Develop a thorough understanding of the operation, uses, and scope of bioinformatics systems
- Interpret and communicate the results of scientific research
- Learn how to computerize medical processes by learning about the most powerful and common tools for this purpose
- Participate in the phases of an experimental design, knowing the applicable regulations and the steps to be followed
- Analyze massive patient data to provide concrete and clear information for medical decision-making
- Manage diagnostic systems for the generation of medical images, understanding their physical principles, use and scope
- Develop a global vision of the E-Health sector, with a business contribution that will facilitate the creation and development of entrepreneurial ideas

Specific Skills

- Obtain a comprehensive overview of research and development methods within the field of telemedicine
- Integrate massive data analysis, Big data, into many traditional models
- Discover the possibilities that integrating Industry 4.0 and IoT opens
- Recognize various image acquisition techniques, while grasping the physics behind each modality
- Analyze the general operation of a computerized data processing system from hardware to software
- Recognize DNA analysis systems
- Develop in depth each of the biomedical research modalities in which the Big Data approach is used and the characteristics of the data used
- Establish the differences in terms of data processing in each of these modalities in biomedical research
- Propose models adapted to artificial intelligence use cases
- Receive facilities to obtain a privileged position when seeking business opportunities or participating in projects

04

Course Management

One of the most significant characteristics of TECH Technological University degrees is the inclusion of a specialized teaching staff in the area in which it is developed. Thanks to this, it is possible to offer training taught by professionals in the sector, who know in detail the ins and outs of the industry and the latest developments related to the use of certain techniques and strategies. In the case of this Professional Master's Degree, a team versed in the field of computer science and biomedical engineering has been selected to guide the graduates through this academic experience so that they can get the most out of it.

Having a teaching staff versed in the area of computer science and biomedical engineering will allow you to resolve any doubts that may arise during the course of the degree"

Management

Ms. Sirera Pérez, Ángela

- Designer of specific parts for 3D printing at Technadi
- Technician in the Nuclear Medicine area of the University Clinic of Navarra
- Degree in Biomedical Engineering from the University of Navarra
- MBA and Leadership in Healthcare and Medical Technology Companies

Professors

Ms. Crespo Ruiz, Carmen

- Intelligence, Strategy and Privacy Analysis Specialist
- Director of Strategy and Privacy at Freedom&Flow SL
- Co-founder of Healthy Pills SL
- Innovation Consultant & Project Technician. CEEI CIUDAD REAL
- Co-founder of Thinking Makers
- Data protection consultancy and training. Tangente Cooperative Group
- University Lecturer
- Law Degree, UNED (National University for Distance Education)
- Degree in Journalism, University Pontificia of Salamanca
- Master's Degree in Intelligence Analysis, Carlos III and Rey Juan Carlos Universities, with the endorsement of the National Intelligence Center-CNI)
- Advanced Executive Program on Data Protection Officer

Mr. Piró Cristobal, Miguel

- E-Health Support Manager at ERN Transplantchild
- Electromedical Technician. Electromedical Business Group GEE
- Data and Analysis Specialist - Data and Analysis Team. BABEL
- Biomedical Engineer at MEDIC LAB. UAM
- Director of External Affairs CEEIBIS
- Degree in Biomedical Engineering, Carlos III University of Madrid
- Master's Degree in Clinical Engineering Carlos III University of Madrid
- Master's Degree in Financial Technologies: Fintech Carlos III University of Madrid
- Training in Data Analysis in Biomedical Research. La Paz University Hospital

Dr. Somolinos Simón, Francisco Javier
- Biomedical Engineering Researcher at the Bioengineering and Telemedicine Group of the Polytechnic University of Madrid
- R&D&I Consultant at Evalue Innovation
- Biomedical Engineering Researcher at the Bioengineering and Telemedicine Group of the Polytechnic University of Madrid
- D. in Biomedical Engineering from the Polytechnic University of Madrid
- Graduate in Biomedical Engineering from the Polytechnic University of Madrid.
- Master's Degree in Management and Development of Biomedical Technologies from Carlos III University of Madrid

Dr. Pacheco Gutiérrez, Victor Alexander
- Specialist in Orthopedics and Sports Medicine, Dr. Sulaiman Al Habib Hospital
- Medical Advisor, Venezuelan Cycling Federatio
- Specialist, Department of Shoulder and Elbow Orthopedics and Sports Medicine, La Isabelica Clinical Center
- Medical advisor to several baseball clubs and to the Carabobo Boxing Association
- Degree in Medicine, University of Carabobo
- Specialty in Orthopedics and Traumatology, Dr. Enrique Tejera Hospital City

Dr. Ortega Núñez, Miguel Ángel
- Researcher in the area of Biomedicine
- Assistant Professor, Department of Medicine and Medical Specialties, University of Alcalá, Spain
- Doctorate in Health Sciences, University of Alcala
- Graduate in Health Biology from the University of Alcalá
- Master's Degree in Genetics and Cell Biology from the University of Alcalá
- Master's Degree in University Teaching

Ms. Ruiz de la Bastida, Fátima
- Data Scientist at IQVIA
- Area Specialist, Bioinformatics Unit, Jimenez Diaz Foundation Research Institute
- Oncology Researcher at the La Paz University Hospital
- Graduate in Biotechnology, University of Cadiz
- Master's Degree in Bioinformatics and Computational Biology, Autonomous University of Madrid
- Specialist in Artificial Intelligence and Data Analysis at the University of Chicago

Mr. Varas Pardo, Pablo
- Biomedical Engineer Expert Data Scientist
- Data Scientist. Institute of Mathematical Sciences (ICMAT)
- Biomedical Engineer, La Paz Hospital
- Graduate in Biomedical Engineering from the Polytechnic University of Madrid.
- Internship at 12 de Octubre Hospital
- Master's Degree in Technological Innovation in Health, UPM and Higher Technical Institute of Lisbon
- Master's Degree in Biomedical Engineering Polytechnic University of Madrid

Ms. Muñoz Gutiérrez, Rebeca
- Data Scientist at INDITEX
- Firmware Engineer for Clue Technologies
- Graduate in Health Engineering, specializing in Biomedical Engineering from the University of Malaga and the University of Seville
- Master's Degree in Intelligent Avionics, Clue Technologies, in collaboration with the University of Málaga
- NVIDIA: Fundamentals of Accelerated Computing with CUDA C/C++
- NVIDIA: Accelerating CUDA C++ Applications with Multiple GPUs

05

Structure and Content

Both the structure and the content of this Professional Master's Degree have been designed taking into account two factors: the criteria of the teaching team and the use of the most avant-garde and effective pedagogical methodology. Thanks to this, it has been possible to shape a highly capacitating degree in the field of informatics applied to E-Health and Big Data, with which graduates will acquire specialized and updated knowledge. Additionally, its convenient 100% online format will allow them to take this academic experience from wherever they want, without schedules or face-to-face classes, and through a program exclusively tailored to their needs and those of the sector.

The use of the Relearning methodology in this program will save you hours of study and memorization without renouncing the acquisition of a broad and specialized knowledge"

Module 1. Molecular Medicine and Pathology Diagnosis

1.1. Molecular Medicine
- 1.1.1. Cellular and Molecular Biology. Cell Injury and Cell Death. Aging
- 1.1.2. Diseases Caused by Microorganisms and Host Defence
- 1.1.3. Autoimmune Diseases
- 1.1.4. Toxicological Diseases
- 1.1.5. Hypoxia Diseases
- 1.1.6. Diseases related to the Environment
- 1.1.7. Genetic Diseases and Epigenetics
- 1.1.8. Oncological Diseases

1.2. Circulatory System
- 1.2.1. Anatomy and Function
- 1.2.2. Myocardial Diseases and Heart Failure
- 1.2.3. Cardiac Rhythm Diseases
- 1.2.4. Valvular and Pericardial Diseases
- 1.2.5. Atherosclerosis, Arteriosclerosis and Arterial Hypertension
- 1.2.6. Peripheral Arterial and Venous Disease
- 1.2.7. Lymphatic Disease (Greatly Overlooked)

1.3. Respiratory Diseases
- 1.3.1. Anatomy and Function
- 1.3.2. Acute and Chronic Obstructive Pulmonary Diseases
- 1.3.3. Pleural and Mediastinal Diseases
- 1.3.4. Infectious Diseases of the Pulmonary Parenchyma and Bronchi
- 1.3.5. Pulmonary Circulation Diseases

1.4. Digestive System Diseases
- 1.4.1. Anatomy and Function
- 1.4.2. Digestive System, Nutrition, and Hydroelectrolyte Exchange
- 1.4.3. Gastroesophageal Diseases
- 1.4.4. Gastrointestinal Infectious Diseases
- 1.4.5. Liver and Biliary Tract Diseases
- 1.4.6. Pancreatic Diseases
- 1.4.7. Colon Diseases

1.5. Renal and Urinary Tract Diseases
- 1.5.1. Anatomy and Function
- 1.5.2. Kidney failure (Prerenal, Renal, and Postrenal) How They Are Triggered
- 1.5.3. Obstructive Urinary Tract Diseases
- 1.5.4. Sphincteric Insufficiency in the Urinary Tract
- 1.5.5. Nephrotic Syndrome and Nephritic Syndrome

1.6. Endocrine System Diseases
- 1.6.1. Anatomy and Function
- 1.6.2. The Menstrual Cycle and Associated Conditions
- 1.6.3. Thyroid Disease
- 1.6.4. Adrenal Insufficiency
- 1.6.5. Disorders of Sexual Differentiation
- 1.6.6. Hypothalamic-pituitary Axis, Calcium Metabolism, Vitamin D and its Effects on Growth and Bone System

1.7. Metabolism and Nutrition
- 1.7.1. Essential and Non-Essential Nutrients: Clarifying Definitions
- 1.7.2. Carbohydrate Metabolism and Alterations
- 1.7.3. Protein Metabolism and Alterations
- 1.7.4. Lipids Metabolism and Alterations
- 1.7.5. Iron Metabolism and Alterations
- 1.7.6. Disorders of Acid-Base Balance
- 1.7.7. Sodium and Potassium Metabolism and Alterations
- 1.7.8. Nutritional Diseases (Hypercaloric and Hypocaloric)

1.8. Hematologic Diseases
- 1.8.1. Anatomy and Function
- 1.8.2. Red Blood Cell Disorders
- 1.8.3. Diseases of White Blood Cells, Lymph Nodes and Spleen
- 1.8.4. Hemostasis and Bleeding Diseases

1.9. Musculoskeletal System Diseases
- 1.9.1. Anatomy and Function
- 1.9.2. Joints: Types and Function
- 1.9.3. Bone Regeneration
- 1.9.4. Normal and Pathological Skeletal System Development

1.9.5. Deformities of the Upper and Lower Limbs
1.9.6. Joint Pathology, Cartilage, and Synovial Fluid Analysis
1.9.7. Joint Diseases with Immunologic Origin
1.10. Nervous System Diseases
1.10.1. Anatomy and Function
1.10.2. Central and Peripheral Nervous System Development
1.10.3. Development of the Spine and Components
1.10.4. Cerebellum and Proprioceptive Diseases
1.10.5. Brain Disorders (Central Nervous System)
1.10.6. Spinal Cord and Cerebrospinal Fluid Diseases
1.10.7. Stenotic Diseases of the Peripheral Nervous System
1.10.8. Infectious Diseases of the Central Nervous System
1.10.9. Cerebrovascular Disease (Stenotic and Hemorrhagic)

Module 2. Health system Management and Administration in Health Centers

2.1. Healthcare Systems
2.1.1. Healthcare Systems
2.1.2. Healthcare Systems according to the WHO
2.1.2. Healthcare Context
2.2. Healthcare Models I. Bismark Model vs. Beveridge Model
2.2.1. Bismark Model
2.2.2. Beveridge Model
2.2.3. Bismark Model Beveridge Model
2.3. Healthcare Models II. Semashko, Private and Mixed Models
2.3.1. Semashko Model
2.3.2. Private Model
2.3.3. Mixed Models
2.4. The Health Market
2.4.1. The Health Market
2.4.2. Health Market Regulation and Limitations
2.4.3. Payment Methods for Doctors and Hospitals
2.4.4. Clinical Engineers
2.5. Hospitals. Typology
2.5.1. Hospital Architecture
2.5.2. Types of Hospitals
2.5.3. Hospital Organization
2.6. Health Metrics
2.6.1. Mortality
2.6.2. Morbidity
2.6.3. Healthy Life Years
2.7. Health Resource Allocation Methods
2.7.1. Lineal Programming
2.7.2. Maximization Models
2.7.3. Minimization Models
2.8. Measuring Healthcare Productivity
2.8.1. Measuring Health Productivity
2.8.2. Productivity Ratios
2.8.3. Input Adjustment
2.8.4. Output Adjustment
2.9. Health Process Improvement
2.9.1. *Lean Management* Process
2.9.2. Work Simplification Tools
2.9.3. Troubleshooting Tools
2.10. Healthcare Project Management
2.10.1. The Role Played by *Project Managers*
2.10.2. Team and Project Management Tools
2.10.3. Schedule and Time Management

Module 3. Research in Health Sciences

3.1. Scientific Research I. The Scientific Method
3.1.1. Scientific Research
3.1.2. Research in Health Sciences
3.1.3. The Scientific Method

3.2. Scientific Research II. Typology
- 3.2.1. Basic Research
- 3.2.2. Clinical Research
- 3.2.3. Translational Research

3.3. Evidence-Based Medicine
- 3.3.1. Evidence-Based Medicine
- 3.3.2. Principles of Evidence-Based Medicine
- 3.3.3. Methodology of Evidence-Based Medicine

3.4. Ethics and Legislation in Scientific Research. Declaration of Helsinki
- 3.4.1. The Ethics Committee
- 3.4.2. Declaration of Helsinki
- 3.4.3. Ethics in Health Sciences

3.5. Scientific Research Results
- 3.5.1. Methods
- 3.5.2. Rigor and Statistical Power
- 3.5.3. Scientific Results Validity

3.6. Public Communication
- 3.6.1. Scientific Societies
- 3.6.2. Scientific Conferences
- 3.6.3. Communication Structures

3.7. Funding in Scientific Research
- 3.7.1. Structure in Scientific Projects
- 3.7.2. Public Financing
- 3.7.3. Private and Industrial Funding

3.8. Scientific Resources in Literature Searching. Health Sciences Databases I
- 3.8.1. PubMed-Medline
- 3.8.2. Embase
- 3.8.3. WOS and JCR
- 3.8.4. Scopus and Scimago
- 3.8.5. Micromedex
- 3.8.6. MEDES
- 3.8.7. IBECS
- 3.8.8. LILACS

3.8.9. BDENF
3.8.10. Cuidatge
3.8.11. CINAHL
3.8.12. Cuiden Plus
3.8.13. Enfispo
3.8.14. NCBI (OMIM, TOXNET) and NIH (*National Cancer Institute*) Databases
3.9. Scientific Resources in Literature Searching. Health Sciences Databases II
3.9.1. NARIC - REHABDATA
3.9.2. PEDro
3.9.3. ASABE: *Technical Library*
3.9.4. CAB Abstracts
3.9.5. *Centre for Reviews and Dissemination* (CRD) Databases:
3.9.6. Biomed Central BMC
3.9.7. ClinicalTrials.gov
3.9.8. *Clinical Trials Register*
3.9.9. DOAJ- *Directory of Open Access Journals*
3.9.10. PROSPERO (Registro Internacional Prospectivo de Revisiones Sistemáticas)
3.9.11. TRIP
3.9.12. LILACS
3.9.13. NIH. *Medical Library*
3.9.14. *Medline Plus*
3.9.15. OPS
3.10. Scientific Resources in Literature Searching III. Search Engines and Platforms
3.10.1. Search Engines and Multisearch Engines
3.10.1.1. Findr
3.10.1.2. *Dimensions*
3.10.1.3. Google Scholar
3.10.1.4. Microsoft Academic
3.10.2. WHO International Clinical Trials Registration Platform (ICTRP)
3.10.2.1. PubMed Central PMC
3.10.2.1. Open Science Collector (RECOLECTA)
3.10.2.2. Zenodo
3.10.3. Doctoral Thesis Search Engines
3.10.3.1. DART-Europe
3.10.3.2. Dialnet-Doctoral Thesis
3.10.3.3. OATD (*Open Access Theses and Dissertations*)
3.10.3.4. TDX (Doctoral Theses Online)
3.10.3.5. TESEO
3.10.4. Bibliography Managers
3.10.4.1. *Endnote Online*
3.10.4.2. Mendeley
3.10.4.3. Zotero
3.10.4.4. *Citeulike*
3.10.4.5. *Refworks*
3.10.5. Digital Social Networks for Researchers
3.10.5.1. Scielo
3.10.5.2. Dialnet
3.10.5.3. *Free Medical Journals*
3.10.5.4. DOAJ
3.10.5.5. *Open Science Directory*
3.10.5.6. Redalyc
3.10.5.7. Academia.edu
3.10.5.8. Mendeley
3.10.5.9. *ResearchGate*
3.10.6. Social Web 2.0 Resources
3.10.6.1. *Delicious*
3.10.6.2. *SlideShare*
3.10.6.3. YouTube
3.10.6.4. Twitter
3.10.6.5. Health Science Blogs
3.10.6.6. Facebook.
3.10.6.7. Evernote
3.10.6.8. Dropbox
3.10.6.9. Google Drive

3.10.7. Scientific Journal Publishers and Aggregators Portals
- 3.10.7.1. *Science Direct*
- 3.10.7.2. Ovid
- 3.10.7.3. *Springer*
- 3.10.7.4. Wiley
- 3.10.7.5. *Proquest*
- 3.10.7.6. Ebsco
- 3.10.7.7. BioMed Central

Module 4. Techniques, Recognition and Intervention using Biomedical Imaging

4.1. Medical Imaging
- 4.1.1. Modalities in Medical Imaging
- 4.1.2. Objectives in Medical Imaging Systems
- 4.1.3. Medical Imaging Storage Systems

4.2. Radiology
- 4.2.1. Imaging Method
- 4.2.2. Radiology Interpretation
- 4.2.3. Clinical Applications

4.3. Computed Tomography (CT)
- 4.3.1. Principle of Operation
- 4.3.2. Image Generation and Acquisition
- 4.3.3. Computerized Tomography. Typology
- 4.3.4. Clinical Applications

4.4. Magnetic Resonance Imaging (MRI)
- 4.4.1. Principle of Operation
- 4.4.2. Image Generation and Acquisition
- 4.4.3. Clinical Applications

4.5. Ultrasound: Ultrasound and Doppler Sonography
- 4.5.1. Principle of Operation
- 4.5.2. Image Generation and Acquisition
- 4.5.3. Typology
- 4.5.4. Clinical Applications

4.6. Nuclear medicine
- 4.6.1. Physiological Basis in Nuclear Studies. Radiopharmaceuticals and Nuclear Medicine
- 4.6.2. Image Generation and Acquisition
- 4.6.3. Types of Tests
  - 4.6.3.1. Gammagraphy.
  - 4.6.3.2. SPECT
  - 4.6.3.3. PET:
  - 4.6.3.4. Clinical Applications

4.7. Image-Guided Interventions
- 4.7.1. Interventional Radiology
- 4.7.2. Interventional Radiology Objectives
- 4.7.3. Procedures
- 4.7.4. Advantages and Disadvantages.

4.8. Image Quality
- 4.8.1. Technique
- 4.8.2. Contrast
- 4.8.3. Resolution
- 4.8.4. Noise
- 4.8.5. Distortion and Artifacts

4.9. Medical Imaging Tests. Biomedicine
- 4.9.1. Creating 3D Images
- 4.9.2. Biomodels
  - 4.9.2.1. DICOM Standard
  - 4.9.2.2. Clinical Applications

4.10. Radiological Protection
- 4.10.1. European Legislation Applicable to Radiology Services
- 4.10.2. Safety and Action Protocols
- 4.10.3. Radiological Waste Management
- 4.10.4. Radiological Protection
- 4.10.5. Care and Characteristics of Rooms

Module 5. Computation in Bioinformatics

5.1. Central Tenet in Bioinformatics and Computing. Current State
- 5.1.1. The Ideal Application in Bioinformatics
- 5.1.2. Parallel Developments in Molecular Biology and Computing
- 5.1.3. Dogma in Biology and Information Theory
- 5.1.4. Information Flows

5.2. Databases for Bioinformatics Computing
- 5.2.1. Database
- 5.2.2. Data management
- 5.2.3. Data Life Cycle in Bioinformatics
  - 5.2.3.1. Use
  - 5.2.3.2. Modifications
  - 5.2.3.3. Archive
  - 5.2.3.4. Reuse
  - 5.2.3.5. Discarded
- 5.2.4. Database Technology in Bioinformatics
  - 5.2.4.1. Architecture
  - 5.2.4.2. Database Management
- 5.2.5. Interfaces for Bioinformatics Databases

5.3. Networks for Bioinformatics Computing
- 5.3.1. Communication Models. LAN, WAN, MAN and PAN Networks
- 5.3.2. Protocols and Data Transmission
- 5.3.3. Network Topologies
- 5.3.4. Datacenter Hardware for Computing
- 5.3.5. Security, Management and Implementation

5.4. Search Engines in Bioinformatics
- 5.4.1. Search Engines in Bioinformatics
- 5.4.2. Search Engine Processes and Technologies in Bioinformatics
- 5.4.3. Computational Models: Search and Approximation Algorithms

5.5. Data Display in Bioinformatics
- 5.5.1. Displaying Biological Sequences
- 5.5.2. Displaying Biological Structures
  - 5.5.2.1. Visualization Tools
  - 5.5.2.2. Rendering Tools
- 5.5.3. User Interface in Bioinformatics Applications
- 5.5.4. Information Architectures for Displays in Bioinformatics

5.6. Statistics for Computing
- 5.6.1. Statistical Concepts for Computing in Bioinformatics
- 5.6.2. Use Case: MARN *Microarrays*
- 5.6.3. Imperfect Data. Errors in statistics: Randomness, Approximation, Noise and Assumptions
- 5.6.4. Error Quantification: Precision and Sensitivity
- 5.6.5. Clustering and Classification

5.7. Data Mining
- 5.7.1. Mining and Data Computing Methods
- 5.7.2. Infrastructure for Data Mining and Computing
- 5.7.3. Pattern Discovery and Recognition
- 5.7.4. Machine Learning and New Tools

5.8. Genetic Pattern Matching
- 5.8.1. Genetic Pattern Matching
- 5.8.2. Computational Methods for Sequence Alignments
- 5.8.3. Pattern Matching Tools

5.9. Modelling and Simulation
- 5.9.1. Use in the Pharmaceutical Field: Drug Discovery
- 5.9.2. Protein Structure and Systems Biology
- 5.9.3. Available Tools and Future

5.10. Collaboration and Online Computing Projects
- 5.10.1. Grid Computing
- 5.10.2. Standards and Rules Uniformity, Consistency and Interoperability
- 5.10.3. Collaborative Computing Projects

Module 6. Biomedical Databases

6.1. Biomedical Databases
- 6.1.1. Biomedical Databases
- 6.1.2. Primary and Secondary Databases
- 6.1.3. Major Databases

6.2. DNA Databases
- 6.2.1. Genome Databases
- 6.2.2. Gene Databases
- 6.2.3. Mutations and Polymorphisms Databases

6.3. Protein Databases
- 6.3.1. Primary Sequence Databases
- 6.3.2. Secondary Sequence and Domain Databases
- 6.3.3. Macromolecular Structure Databases

6.4. Omics Projects Databases
- 6.4.1. Genomics Studies Databases
- 6.4.2. Transcriptomics Studies Databases
- 6.4.3. Proteomics Studies Databases

6.5. Genetic Diseases Databases. Personalized and Precision Medicine
- 6.5.1. Genetic Diseases Databases
- 6.5.2. Precision Medicine. The Need to Integrate Genetic Data
- 6.5.3. Extracting Data from OMIM

6.6. Self-Reported Patient Repositories
- 6.6.1. Secondary Data Use
- 6.6.2. Patients' Role in Deposited Data Management
- 6.6.3. Repositories of Self-Reported Questionnaires Examples:

6.7. Elixir Open Databases
- 6.7.1. Elixir Open Databases
- 6.7.2. Databases Collected on the Elixir Platform
- 6.7.3. Criteria for Choosing between Databases

6.8. Adverse Drug Reactions (ADRs) Databases
- 6.8.1. Pharmacological Development Processes
- 6.8.2. Adverse Drug Reaction Reporting
- 6.8.3. Adverse Reaction Repositories at European and International Levels

6.9. Research Data Management Plans. Data to be Deposited in Public Databases
- 6.9.1. Data Management Plans
- 6.9.2. Data Custody in Research
- 6.9.3. Data Entry in Public Databases

6.10. Clinical Databases Problems with Secondary Use of Health Data
- 6.10.1. Medical Record Repositories
- 6.10.2. Data Encryption

Module 7. Big Data in Medicine: Massive Medical Data Processing

7.1. Big Data in Biomedical Research
- 7.1.1. Data Generation in Biomedicine
- 7.1.2. *High-Throughput* Technology
- 7.1.3. Uses of High-Throughput Data. Hypotheses in the Age of Big Data

7.2. Data Pre-Processing in Big Data
- 7.2.1. Data Pre-Processing
- 7.2.2. Methods and Approaches
- 7.2.3. Problems with Data Pre-Processing in Big Data

7.3. Structural Genomics
- 7.3.1. Sequencing the Human Genome
- 7.3.2. Sequencing vs. Chips
- 7.3.3. Variant Discovery

7.4. Functional Genomics
- 7.4.1. Functional Notation
- 7.4.2. Mutation Risk Predictors
- 7.4.3. Association Studies in Genomics

7.5. Transcriptomics
- 7.5.1. Techniques to Obtain Massive Data in Transcriptomics: RNA-seq
- 7.5.2. Data Normalization in Transcriptomics
- 7.5.3. Differential Expression Studies

7.6. Interactomics and Epigenomics
- 7.6.1. The Role of Cromatine in Gene Expression
- 7.6.2. High-Throughput Studies in Interactomics
- 7.6.3. High-Throughput Studies in Epigenetics

7.7. Proteomics
- 7.7.1. Analysis of Mass Spectrometry Data
- 7.7.2. Post-Translational Modifications Study
- 7.7.3. Quantitative Proteomics

7.8. Enrichment and *Clustering* Techniques
- 7.8.1. Contextualizing Results
- 7.8.2. *Clustering* Algorithms in Omics Techniques
- 7.8.3. Repositories for Enrichment: *Gene Ontology* and KEGG

7.9. Applying Big Data to Public Health
- 7.9.1. Discovery of New Biomarkers and Therapeutic Targets
- 7.9.2. Risk Predictors
- 7.9.3. Personalized Medicine

7.10. Big Data Applied to Medicine
- 7.10.1. Potential for Diagnostic and Preventive Assistance
- 7.10.2. Use of *Machine Learning* Algorithms in Public Health
- 7.10.3. The Problem of Privacy

Module 8. Applications of Artificial Intelligence and the Internet of Things (IoT) in Telemedicine

8.1. E-Health Platforms. Personalizing Healthcare Services
- 8.1.1. E-Health Platform
- 8.1.2. Resources for E-Health Platforms
- 8.1.3. Digital Europe Program. Digital Europe-4-Health and Horizon Europe

8.2. Artificial Intelligence in Healthcare I: New Solutions in Computer Applications
- 8.2.1. Remote Analysis of Results
- 8.2.2. Chatbox
- 8.2.3. Prevention and Real-Time Monitoring
- 8.2.4. Preventive and Personalized Medicine in Oncology

8.3. Artificial Intelligence in Healthcare II:
- 8.3.1. Monitoring Patients with Reduced Mobility
- 8.3.2. Cardiac Monitoring, Diabetes, Asthma

8.3.3. Health and Wellness Apps
8.3.3.1. Heart Rate Monitors
8.3.3.2. Blood Pressure Bracelets
8.3.4. Ethical Use of AI in the Medical Field. Data Protection
8.4. Artificial Intelligence Algorithms for Image Processing
8.4.1. Artificial Intelligence Algorithms for Image Handling
8.4.2. Image Diagnosis and Monitoring in Telemedicine
8.4.2.1. Melanoma Diagnosis
8.4.3. Limitations and Challenges in Image Processing in Telemedicine
8.5. Application Acceleration using Graphics Processing Units (GPU) in Medicine
8.5.1. Program Parallelization
8.5.2. GPU Operations
8.5.3. Application Acceleration using GPU in Medicine
8.6. Natural Language Processing (NLP) in Telemedicine
8.6.1. Text Processing in the Medical Field. Methodology
8.6.2. Natural Language Processing in Therapy and Medical Records
8.6.3. Limitations and Challenges in Natural Language Processing in Telemedicine
8.7. The Internet of Things (IoT) in Telemedicine. Applications
8.7.1. Monitoring Vital Signs. *Wearables*
8.7.1.1. Blood Pressure, Temperature, and Heart Rate
8.7.2. The IoT and *Cloud* Technology
8.7.2.1. Data Transmission to the Cloud
8.7.3. Self-Service Terminals
8.8. IoT in Patient Monitoring and Care
8.8.1. IoT Applications for Emergency Detection
8.8.2. The Internet of Things in Patient Rehabilitation
8.8.3. Artificial Intelligence Support in Victim Recognition and Rescue
8.9. Nanorobots. Typology
8.9.1. Nanotechnology
8.9.2. Types of Nanorobots
8.9.2.1. Assemblers. Applications
8.9.2.2. Self-Replicators. Applications
8.10. Artificial Intelligence in COVID-19 Control
8.10.1. COVID-19 and Telemedicine
8.10.2. Management and Communication of Breakthroughs and Outbreaks
8.10.3. Outbreak Prediction in Artificial Intelligence

Module 9. Telemedicine and Medical, Surgical and Biomechanical Devices

9.1. Telemedicine and Telehealth
9.1.1. Telemedicine as a Telehealth Service
9.1.2. Telemedicine
9.1.2.1. Telemedicine Objectives
9.1.2.2. Benefits and Limitations of Telemedicine
9.1.3. Digital Health. Technologies
9.2. Telemedicine Systems
9.2.1. Components in Telemedicine Systems
9.2.1.1. Personal
9.2.1.2. Technology
9.2.2. Information and Communication Technologies (ICT) in the Health Sector
9.2.2.1. t-Health
9.2.2.2. mHealth
9.2.2.3. u-Health
9.2.2.4. p-Health
9.2.3. Telemedicine Systems Assessment
9.3. Technology Infrastructure in Telemedicine
9.3.1. Public Switched Telephone Network (PSTN)
9.3.2. Satellite Networks
9.3.3. Integrated Services Digital Network (ISDN)
9.3.4. Wireless Technology
9.3.4.1. WAP. Wireless Application Protocol
9.3.4.2. Bluetooth
9.3.5. Microwave Connections
9.3.6. Asynchronous Transfer Mode (ATM)
9.4. Types of Telemedicine. Uses in Healthcare
9.4.1. Remote Patient Monitoring
9.4.2. Storage and Shipping Technologies
9.4.3. Interactive Telemedicine

9.5. Telemedicine: General Applications
- 9.5.1. Telecare
- 9.5.2. Telemonitoring
- 9.5.3. Telediagnostics
- 9.5.4. Teleeducation
- 9.5.5. Telemanagement

9.6. Telemedicine: Clinical Applications
- 9.6.1. Teleradiology
- 9.6.2. Teledermatology
- 9.6.3. Teleoncology
- 9.6.4. Telepsychiatry
- 9.6.5. Home Care (Telehomecare)

9.7. *Smart* Technologies and Care
- 9.7.1. Integrating *Smart Homes*
- 9.7.2. Digital Health to Improve Treatment
- 9.7.3. Telehealth Clothing Technology. "Smart Clothes"

9.8. Ethical and Legal Aspects of Telemedicine
- 9.8.1. Ethical Foundations
- 9.8.2. Common Regulatory Frameworks
- 9.8.4. ISO Standards

9.9. Telemedicine and Diagnostic, Surgical and Biomechanical Devices
- 9.9.1. Diagnostic Devices
- 9.9.2. Surgical Devices
- 9.9.2. Biomechanic Devices

9.10. Telemedicine and Medical Devices
- 9.10.1. Medical Devices
  - 9.10.1.1. Mobile Medical Devices
  - 9.10.1.2. Telemedicine Carts
  - 9.10.1.3. Telemedicine Kiosks
  - 9.10.1.4. Digital Cameras
  - 9.10.1.5. Telemedicine Kit
  - 9.10.1.6. Telemedicine Software

Module 10. Business Innovation and Entrepreneurship in E-Health

10.1. Entrepreneurship and Innovation
- 10.1.1. Innovation
- 10.1.2. Entrepreneurship
- 10.1.3. *Startups*

10.2. Entrepreneurship in E-Health
- 10.2.1. Innovative E-Health Market
- 10.2.2. Verticals in e-Health: mHealth
- 10.2.3. TeleHealth

10.3. Business Models I: First Stages in Entrepreneurship
- 10.3.1. Types of Business Models
  - 10.3.1.1. *Marketplaces*
  - 10.3.1.2. Digital Platforms
  - 10.3.1.3. SaaS
- 10.3.2. Critical Elements in the Initial Phase. The Business Idea
- 10.3.3. Common Mistakes in the First Stages of Entrepreneurship

10.4. Business Models II: Business Model Canvas
- 10.4.1. *Canvas Business Model*
- 10.4.2. Value proposition
- 10.4.3. Key Activities and Resources
- 10.4.4. Customer Segments
- 10.4.5. Customer Relationships
- 10.4.6. Distribution Channels
- 10.4.7. Partnerships
  - 10.4.7.1. Cost Structure and Revenue Streams

10.5. Business Models III: *Lean Startup* Methodology
- 10.5.1. Create
- 10.5.2. Validate
- 10.5.3. Measure
- 10.5.4. Decide

10.6. Business Models IV: External, Strategic and Regulatory Analysis
- 10.6.1. Red Ocean and Blue Ocean Strategies
- 10.6.2. Value Curves
- 10.6.3. Applicable E-Health Regulations

10.7. Successful E-Health Models I: Knowing Before Innovating
- 10.7.1. Analysis of Successful E-Health Companies
- 10.7.2. Analysis of Company X
- 10.7.3. Analysis of Company Y
- 10.7.4. Analysis of Company Z

10.8. Successful E-Health Models II: Listening before Innovating
- 10.8.1. Practical Interview: e-Health *Startup* CEO
- 10.8.2. Practical Interview: "Sector X" *Startup* CEO
- 10.8.3. Practical Interview: "Startup X" Technical Management

10.9. Entrepreneurial Environment and Funding
- 10.9.1. Entrepreneur Ecosystems in the Health Sector
- 10.9.2. Financing
- 10.9.3. Funding

10.10. Practical Tools in Entrepreneurship and Innovation
- 10.10.1. *Open-Source Intelligence* (OSINT)
- 10.10.2. Analysis
- 10.10.3. *No-Code* Tools in Entrepreneurship

Don't hesitate any longer and opt for a degree that, in addition to giving you the keys to succeed in the field of bioinformatics, will give you the key to undertake your own projects in E-Health with guaranteed success".

06

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: ***Relearning*.**

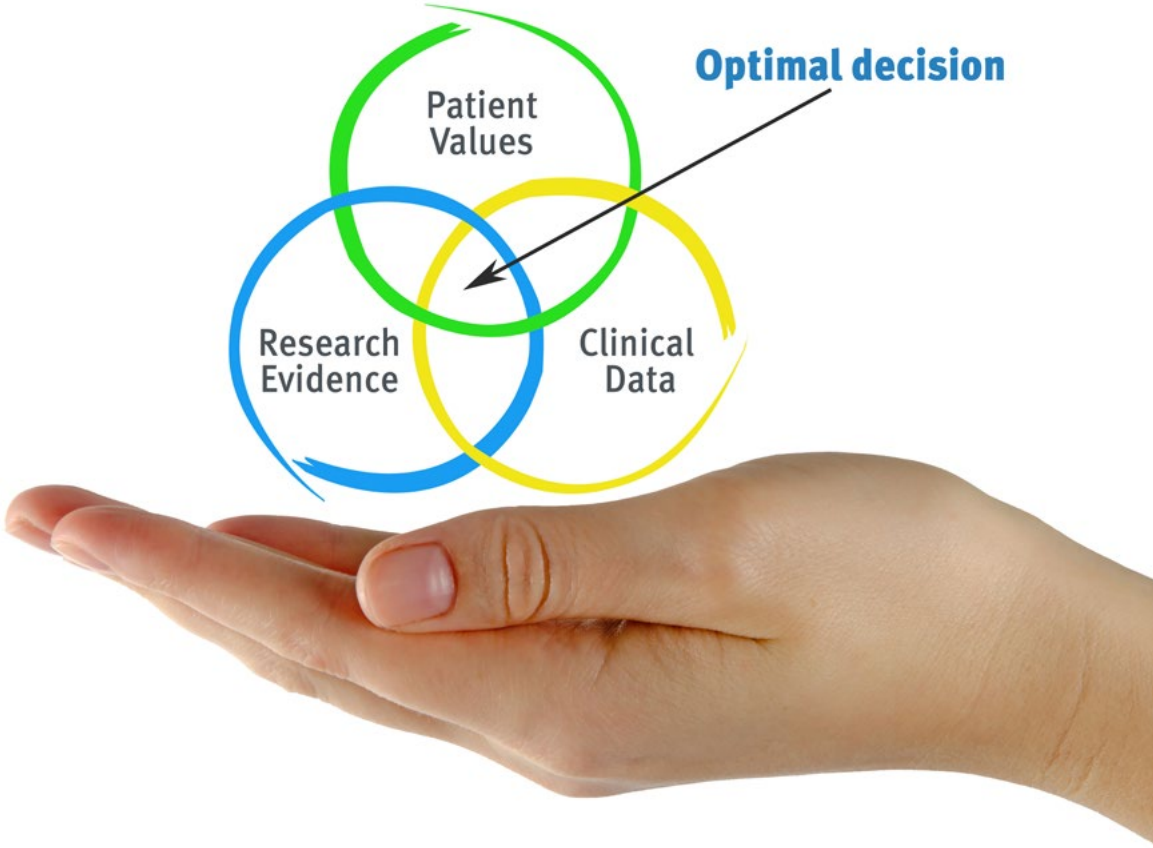
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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

Case Study to contextualize all content

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

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



You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.

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 has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, students 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

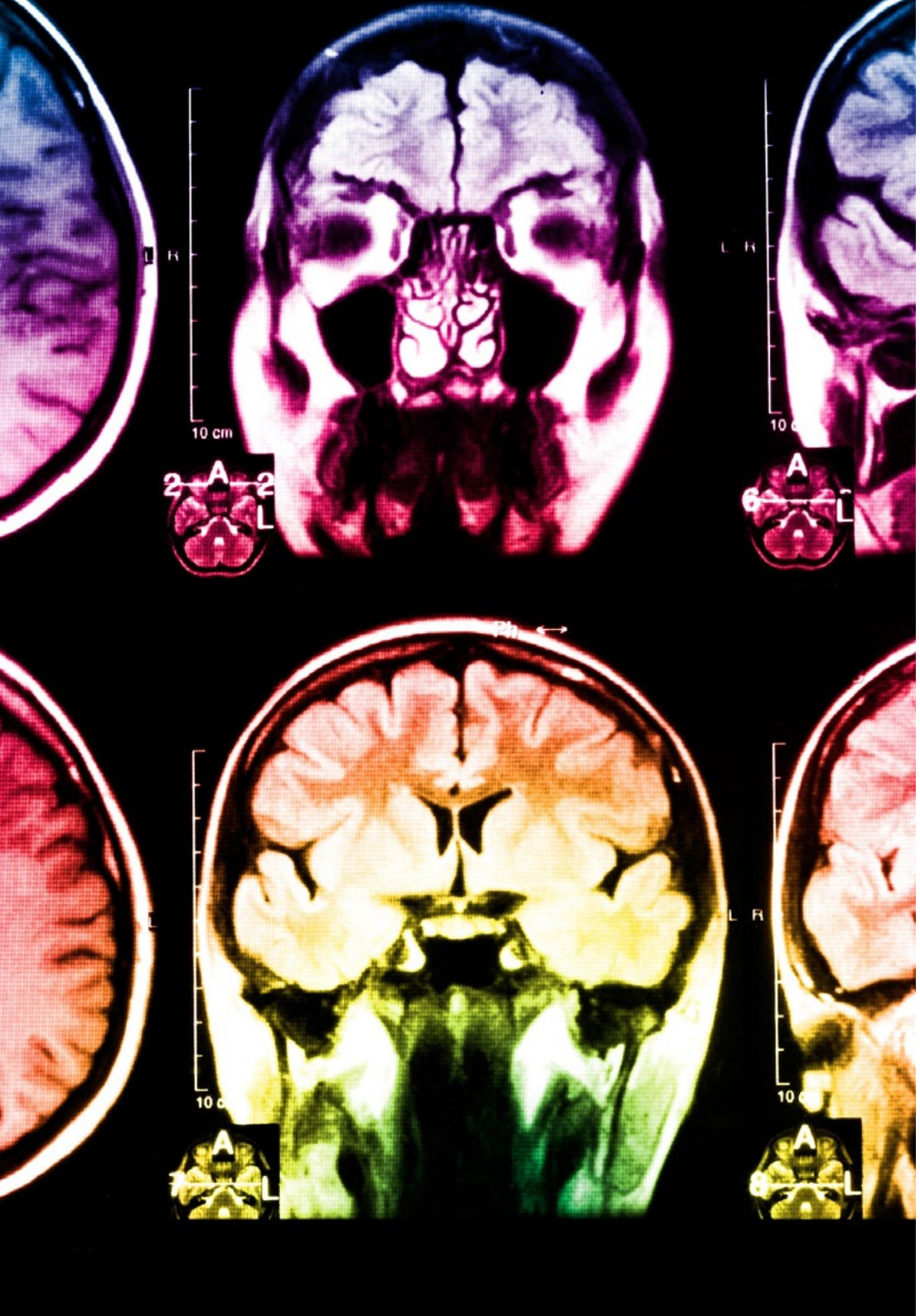
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

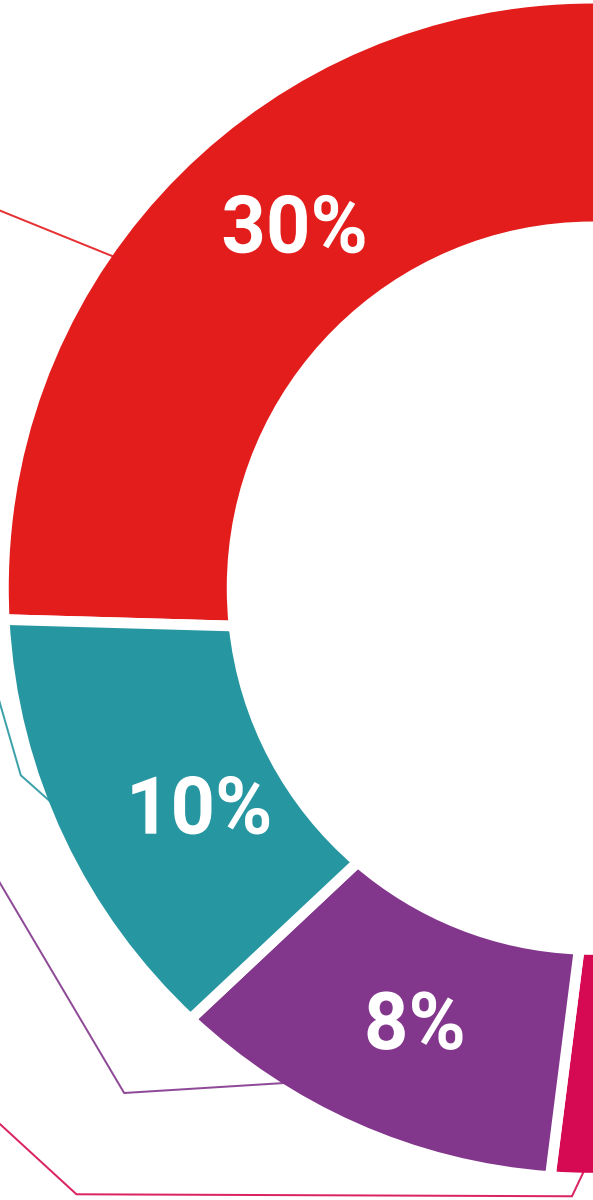
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

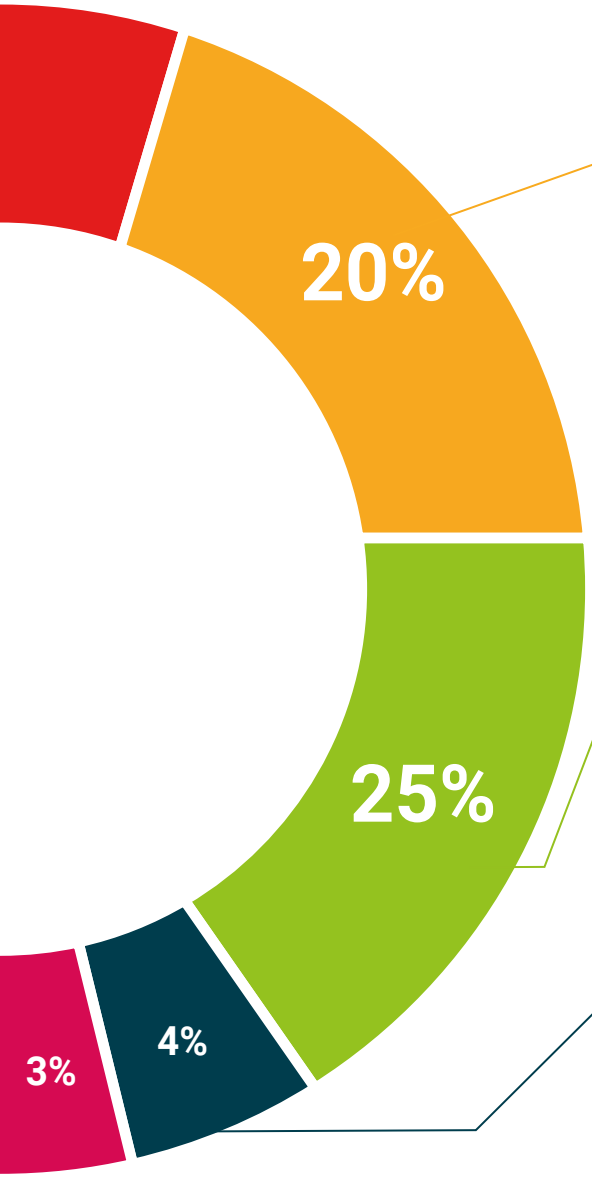
Practising Skills and Abilities

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.

07

Certificate

The Professional Master's Degree in E-Health and Big Data guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate 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 E-Health and Big Data** 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 certificate 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 E-Health and Big Data**
Official Nº of Hours: **1,500 h.**

tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.
For having successfully passed and accredited the following program

PROFESSIONAL MASTER'S DEGREE
in
E-Health and Big Data

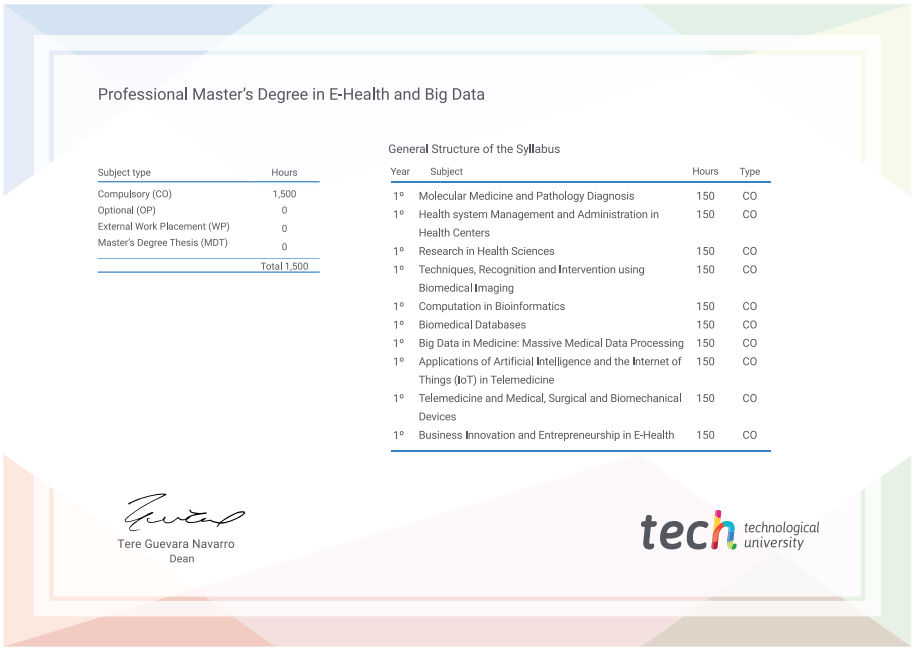
This is a qualification awarded by this University, equivalent to 1,500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S techtitute.com/certificates


Professional Master's Degree in E-Health and Big Data

Subject type	Hours
Compulsory (CO)	1,500
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 1,500

General Structure of the Syllabus

Year	Subject	Hours	Type
1º	Molecular Medicine and Pathology Diagnosis	150	CO
1º	Health system Management and Administration in Health Centers	150	CO
1º	Research in Health Sciences	150	CO
1º	Techniques, Recognition and Intervention using Biomedical Imaging	150	CO
1º	Computation in Bioinformatics	150	CO
1º	Biomedical Databases	150	CO
1º	Big Data in Medicine: Massive Medical Data Processing	150	CO
1º	Applications of Artificial Intelligence and the Internet of Things (IoT) in Telemedicine	150	CO
1º	Telemedicine and Medical, Surgical and Biomechanical Devices	150	CO
1º	Business Innovation and Entrepreneurship in E-Health	150	CO

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

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Professional Master's Degree

E-Health and Big Data

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Professional Master's Degree

E-Health and Big Data

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