Professional Master's Degree

E-Health and Big Data

tech global university

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Professional Master's Degree
E-Health and Big Data

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Global University**
- Credits: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/medicine/professional-master-degree/master-e-health-big-data

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01

Introduction

Telemedicine is a reality today. More and more hospitals, clinics and healthcare professionals are using it to care for their patients. Advances that come hand in hand with new technologies have led to the appearance of devices for the diagnosis and individualized monitoring of the patient. Undoubtedly, such progress means that specialists must constantly update their knowledge and technical skills. That is why TECH has created this 100% online program, which offers the graduate the most relevant and recent information in the field of e-Health, as well as the massive collection of data for use in Biomedicine. All this, through high-quality content, prepared by a team of professional experts in this field.

Thanks to this Professional Master's Degree, the professional will obtain valuable and high-quality information on the momentum of e-Health and Big Data in the health field"

In the 1970s, telemedicine began to be developed as a method of overcoming geographical barriers between patients and medical professionals. However, it was not until the massive arrival of new technologies to the population that integration in the healthcare field really took place.

In this way, two disciplines, which may seem unconnected, such as Engineering and Medicine, are brought together. However, multidisciplinarity has meant that, in recent years, there has been an important advance in the creation of intelligent devices, which allow patient monitoring or the supply of medication doses in people with diabetes. The healthcare professional cannot be oblivious to these advances. That is why this 100% online program was created, which offers the latest and most advanced information on e-Health and Big Data.

An intensive program, where over 12 months, the specialist will delve into Molecular Medicine, research in Health Sciences or the latest technical advances in recognition and intervention through biomedical imaging. All this, through multimedia teaching resources that can be accessed, comfortably, at any time of the day, from an electronic device with an Internet connection.

A syllabus with a modern approach that will allow you, thanks to the Relearning method, to advance through the content in a much more natural and progressive way. Therefore, with the repetition of key concepts, the graduate will be able to reduce the long hours of study and memorization.

In this way, TECH offers medical professionals an excellent opportunity to update their knowledge of e-Health and Big Data, through a high-level and quality program. And the fact is that the graduate who enters this program will not be in attendance and will be able to distribute the teaching load according to their needs. A great opportunity to update knowledge through an educational option for current times.

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

- Practical cases presented by experts in Information and Communication Technology focused on the healthcare services
- 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

Get an update of knowledge in E-Health and Big Data through a 100% online program and without classes with fixed schedules"

This educational program will lead you to delve into trends in the field of Big Data in biomedical research and public health"

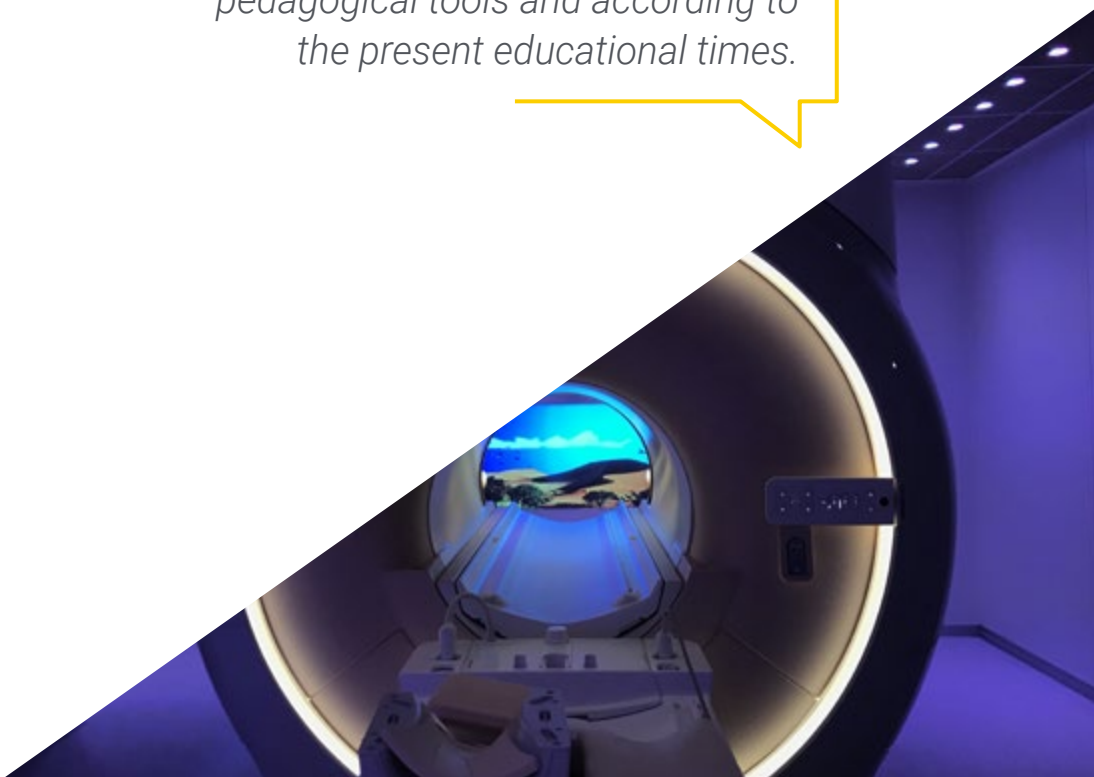
TECH Global University provides you with the most recent and innovative knowledge on the use of bioprocess engineering tools.

Access when you want, to a program that provides you with innovative pedagogical tools and according to the present educational times.

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

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

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. This will be done with the help of an innovative system of interactive videos made by renowned experts.



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Objectives

The syllabus of this Professional Master's Degree in E-Health and Big Data will allow medical professionals to keep abreast of advances in the field of new technologies applied to the healthcare sector. This will lead them, over the course of 12 months, to update their knowledge of telemedicine, new imaging devices for diagnosis or the opportunities offered by the IoT in the field of e-Health. This will be possible, thanks to the teaching resources offered by TECH, from a theoretical-practical perspective.

This Professional Master's Degree offers a theoretical and practical approach to current telemedicine and diagnostic, surgical and biomechanical devices"

General Objectives

- Develop key concepts of medicine that serve as a vehicle to understand 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 an original business idea

You will be able to update your knowledge about the business environment and project opportunities in the e-Health world"

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 apparatus, of the endocrine and metabolic systems and 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
- Delve into 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 an in-depth understanding of the direct relationship between surgical interventions and imaging techniques
- Establish the possibilities offered by artificial intelligence in the recognition of patterns in medical images, thereby furthering innovation in the sector

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 pre-processing in Big Data
- Determine the differences between the data derived from different massive data collection techniques, as well as their special characteristics in terms of pre-processing and handling
- 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 issues and regulatory frameworks surrounding 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 practical tools to analyze the environment and to quickly test and validate business ideas

03

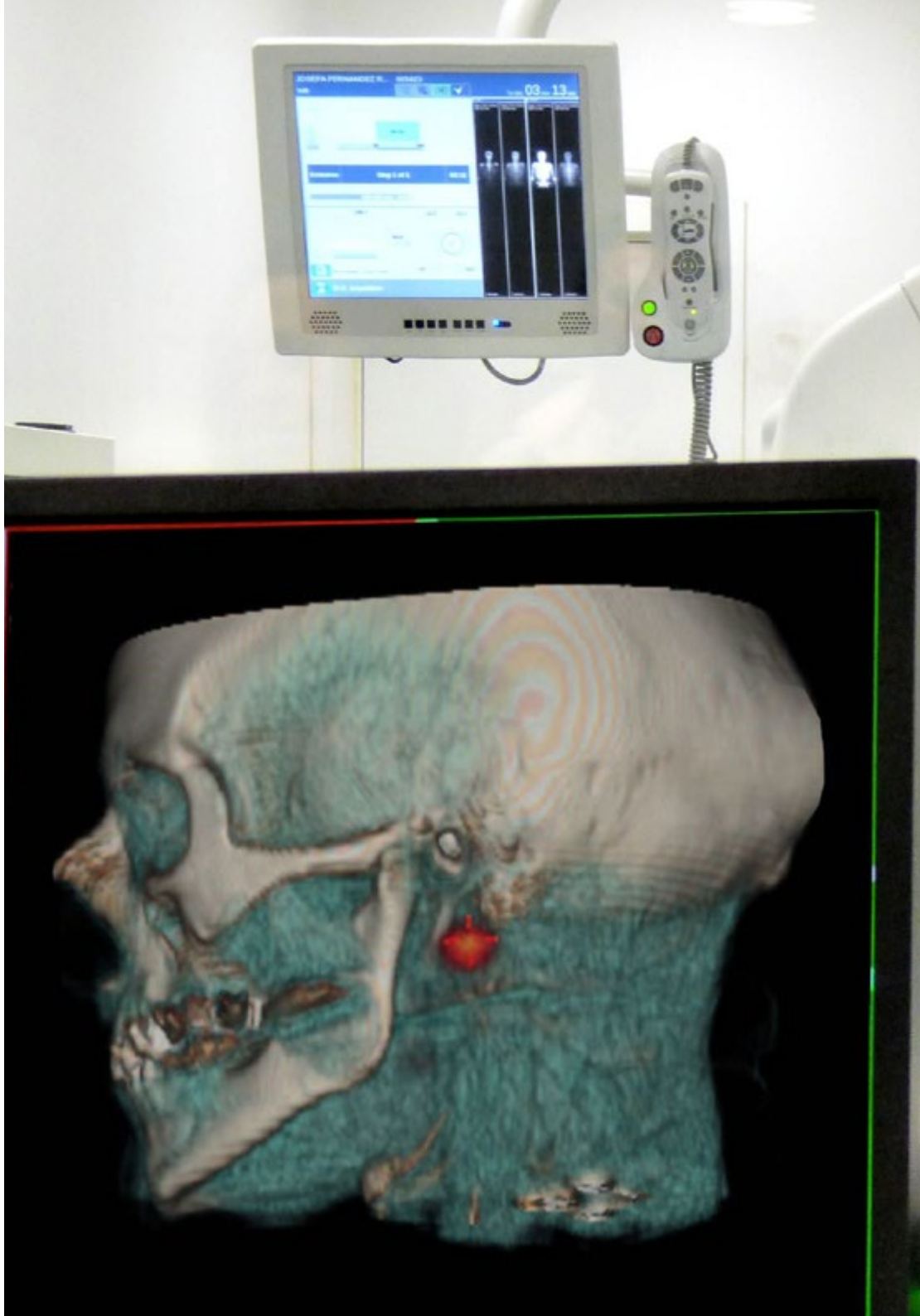
Skills

Nowadays, the fusion of medicine with new technologies has led to the need for professionals to be aware of the latest advances in the so-called E-Health. In this scenario, this program provides the specialist with a practical approach, with information that can be easily integrated into their daily practice. To this end, TECH makes available case study simulations, which will provide a much more direct vision of the progress in this field and in the use of Big Data applied to Medicine.

This Professional Master's Degree will lead you to enhance your diagnostic and patient monitoring capabilities through the Internet of Things (IoT)"

General Skills

- 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 results in 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 while observing the applicable regulations and the steps to 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
- Obtain 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 complete vision of research and development methods in the field of telemedicine
- Integrate massive data analysis, "Big Data", in 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
- Gain an in-depth understanding of the biomedical research modalities where the Big Data approach is used and the characteristics of the data utilized
- Establish the differences in terms of data processing in each of these modalities in biomedical research
- Propose models adapted to artificial intelligence use cases
- Occupy a privileged position when looking for business or research opportunities

04

Course Management

Undoubtedly, the excellent team selected by TECH to teach this program, will lead the professional to successfully achieve to be up to date with the latest developments in the field of e-Health and Big Data. For this purpose, this institution has brought together a management and teaching staff specialized in Biomedicine, E-Health, Bioinformatics and Medicine. This multidisciplinary approach is enriching and in line with the objectives of updating the knowledge sought by the professional studying this Professional Master's Degree. In addition, given the proximity of the faculty, you can resolve any questions that arise about the syllabus during the course of the program.

TECH Global University has assembled an excellent multidisciplinary team, which will bring you the latest news on E-Health and Big Data"

Management

Ms. Sirera Pérez, Ángela

- Biomedical Engineer expert in Nuclear Medicine and exoskeleton design
- 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 Teacher
- 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

Ms. Muñoz Gutiérrez, Rebeca

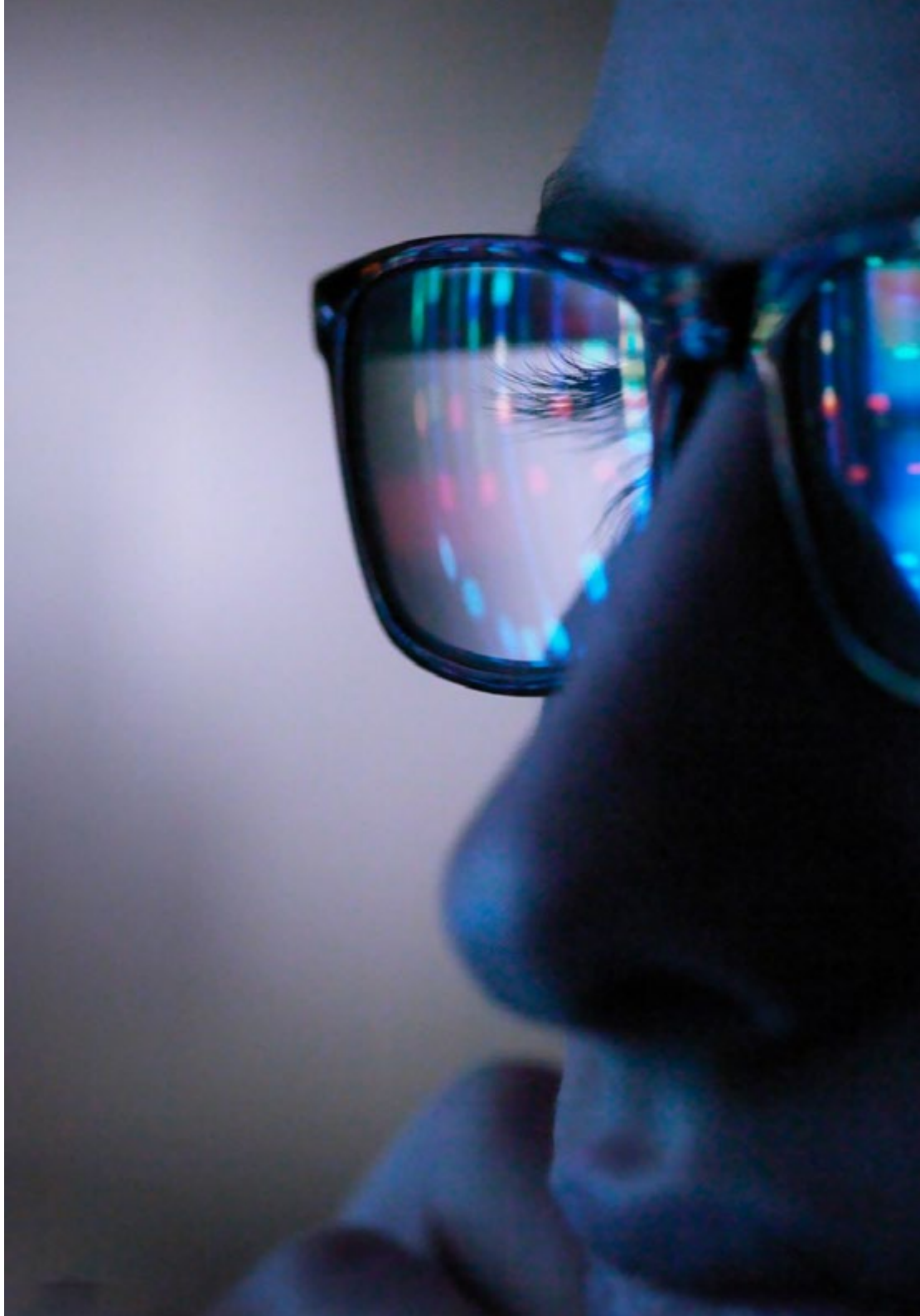
- Data Scientist at INDITEX
- Firmware Engineer for Clue Technologies
- Graduate in Health Engineering, specializing in Biomedical Engineering, University of Malaga and University of Seville
- Master's Degree in Intelligent Avionics, Clue Technologies, in collaboration with the University of Málaga
-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

Ms. Ruiz de la Bastida, Fátima

- Data Scientist at IQVIA
- Specialist in the Bioinformatics Unit of the Institute for Health Research Jiménez Díaz Foundation
- 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

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. 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
- 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

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

05

Structure and Content

The syllabus of this Professional Master's Degree has been developed to provide the professional with the most innovative and recent information on E-Health and Big Data. A fusion that will lead the specialist to delve into the advances in Molecular Medicine, telemedicine or the application of massive data information in the medical field. Graduates will have access to this content whenever they wish and from any electronic device with an Internet connection. In addition, this program will be completed by a library of multimedia resources consisting of video summaries of each topic, videos in detail or essential readings, which will complete this program.

Thanks to the Relearning system you will reduce the long hours of study and memorization so frequent in other teaching methods"

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. Renal Insufficiency (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 Effects on Growth and Skeleton

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
- 2.1.3. 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
- 3.8.10. BDENF
- 3.8.11. Cuidatge
- 3.8.12. CINAHL
- 3.8.13. Cuiden Plus
- 3.8.14. Enfispo
- 3.8.15. 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
- 3.9.6. Centre for Reviews and Dissemination (CRD) Databases:
- 3.9.7. Biomed Central BMC
- 3.9.8. ClinicalTrials.gov
- 3.9.9. Clinical Trials Register
- 3.9.10. DOAJ- Directory of Open Access Journals
- 3.9.11. PROSPERO (International Prospective Register of Systematic Reviews)
- 3.9.12. TRIP
- 3.9.13. LILACS
- 3.9.14. NIH. Medical Library
- 3.9.15. Medline Plus
- 3.9.16. 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
  - 3.10.2.2. Open Science Collector (RECOLECTA)
  - 3.10.2.3. Zenodo
- 3.10.3. Doctoral Thesis Search Engines
  - 3.10.3.1. DART-Europe
  - 3.10.3.2. Dialnet-Doctoral Theses
  - 3.10.3.3. OATD (Open Access Theses and Dissertations)
  - 3.10.3.4. TDR (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. Hardware in Data Centers 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. Statistical Errors: 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 Chromatin 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: Monitoring and Ethical Challenges
- 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-Replicating. 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. M-Health
  - 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
- 9.8.3. ISO Standards

9.9. Telemedicine and Diagnostic, Surgical and Biomechanical Devices
- 9.9.1. Diagnostic Devices
- 9.9.2. Surgical Devices
- 9.9.3. Biomechanical 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: M-Health
- 10.2.3. Tele-Health

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 Normative 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

A 100% online and flexible program that adapts to the needs of medical professionals"

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"

At TECH we use the Case Method

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

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

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

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:

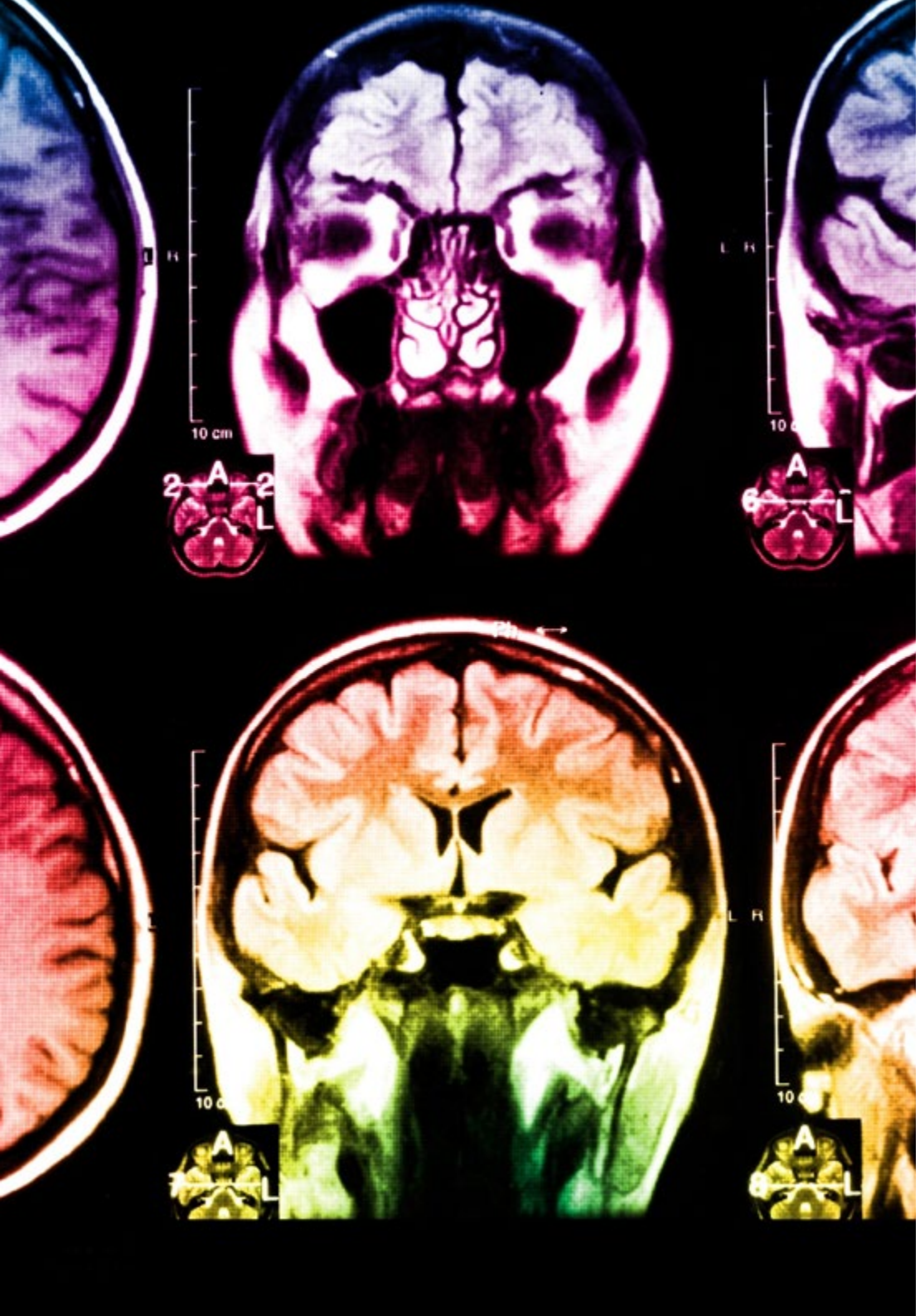
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better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

Relearning Methodology

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

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

Professionals will learn through real cases and by resolving 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 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

Relearning will allow you to learn with less effort and better performance, involving you more in your 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 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.

Surgical Techniques and Procedures on Video

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

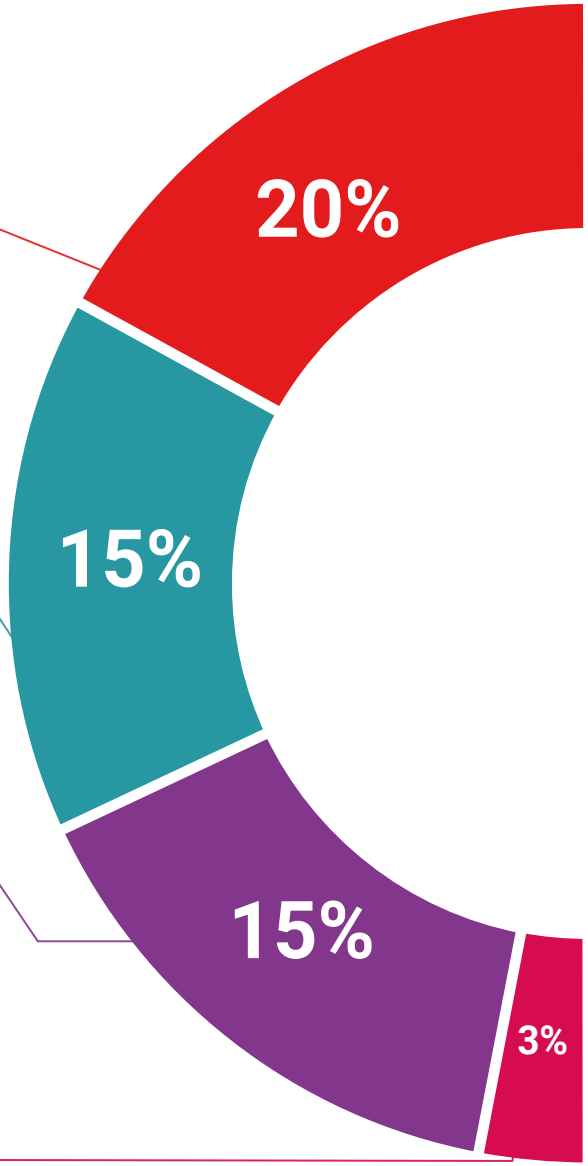
Interactive Summaries

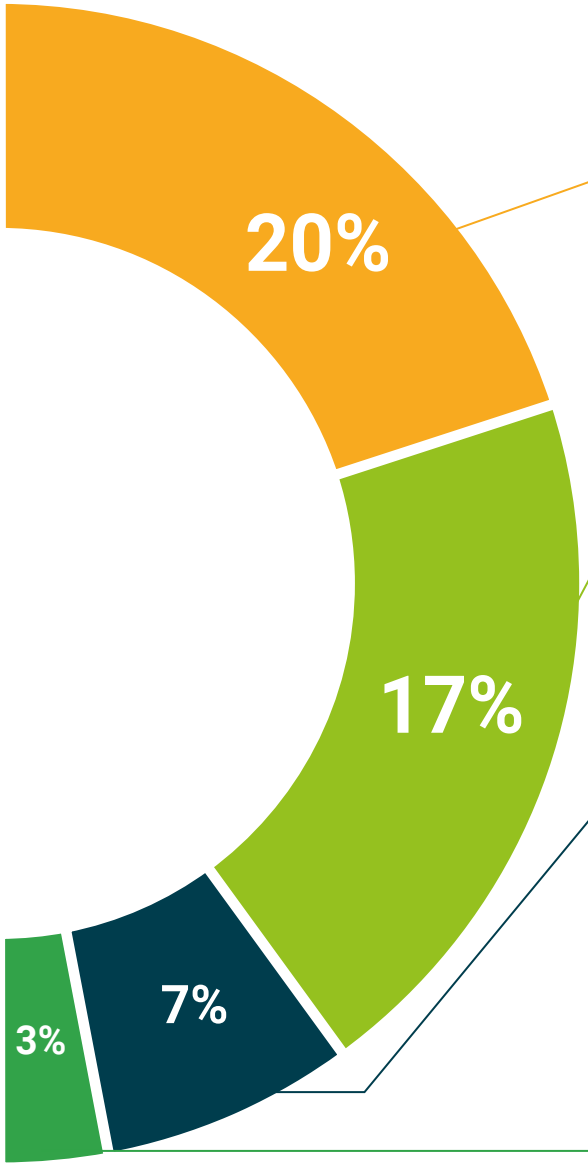
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

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

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Classes

There is scientific evidence 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 E-Health and Big Data guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree diploma issued by TECH Global University.

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

This program will allow you to obtain your **Professional Master's Degree diploma in E-Health and Big Data** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (***official bulletin***). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

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

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

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

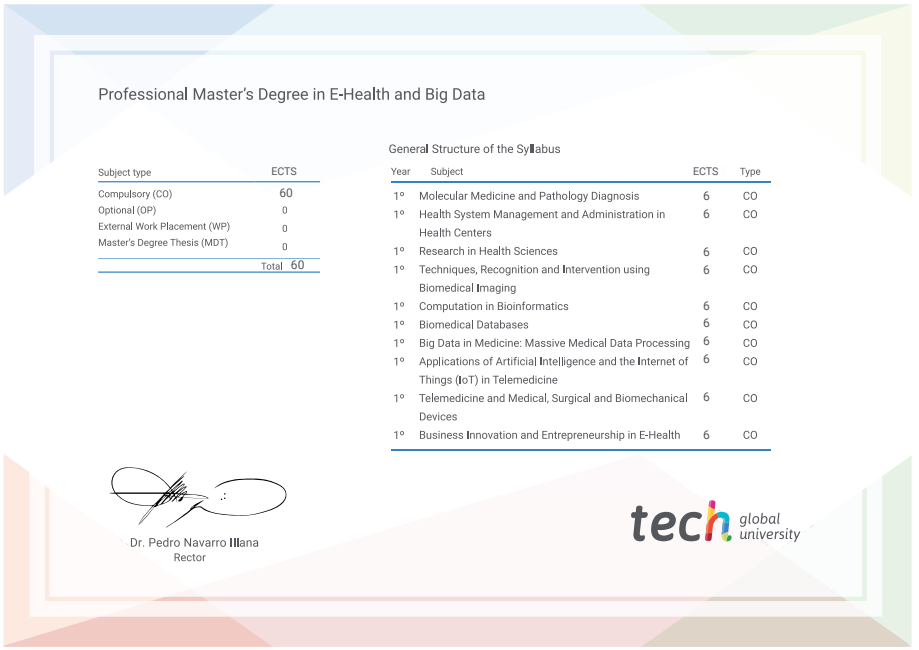
This is a program of 1,500 hours of duration equivalent to 60 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Chancellor

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates


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

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
Total	60

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Molecular Medicine and Pathology Diagnosis	6	CO
1º	Health System Management and Administration in Health Centers	6	CO
1º	Research in Health Sciences	6	CO
1º	Techniques, Recognition and Intervention using Biomedical Imaging	6	CO
1º	Computation in Bioinformatics	6	CO
1º	Biomedical Databases	6	CO
1º	Big Data in Medicine: Massive Medical Data Processing	6	CO
1º	Applications of Artificial Intelligence and the Internet of Things (IoT) in Telemedicine	6	CO
1º	Telemedicine and Medical, Surgical and Biomechanical Devices	6	CO
1º	Business Innovation and Entrepreneurship in E-Health	6	CO

Dr. Pedro Navarro Illana
Rector

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

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Professional Master's Degree

E-Health and Big Data

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Global University**
- Credits: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Professional Master's Degree

E-Health and Big Data

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