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/nursing/professional-master-degree/master-e-health-big-data**

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01

Introduction

Scientific advances have fostered the development of digital health. Today, much more personalized and individualized healthcare is being pursued. To achieve this, professionals must know in depth what tools they can apply in each case, from biomedicine for the application of parts in human bodies, to *Big Data* for the exchange of information between healthcare specialists. For this reason, TECH Global University offers a program aimed at nursing graduates who wish to update their healthcare base by orienting it towards service digitalization, telecare and Information and Communication Technologies (ICT). A 100% online degree, with downloadable materials that provide great flexibility for students to adapt the pace of study to their personal and professional needs.

Thanks to this Professional Master's Degree you will learn about the advantages of E-Health and Big Data applied to the healthcare sector"

Although biomedicine is one of the most remarkable discoveries in the medical field, the truth is that new technologies have made it possible to implement informatics in patient rehabilitation processes. From the massive processing of data for research into rare diseases, to applications that allow the monitoring of patients with serious pathologies or even those that monitor blood sugar levels in patients with diabetes. These are advances that have brought significant improvements in the daily lives of those affected and also in their family environment.

The cost-effective and safe use of technologies, as designated by the WHO, is reflected in the concept of eHealth. Major scientific developments have also incorporated key tools for the development of healthcare treatments. Moreover, thanks to innovation in healthcare centers, it has been possible to improve clinical management and optimize healthcare services. TECH Global University's main objective is to boost the career of graduates who wish to increase their skills in the technological health service and are interested in the simultaneous development of telemedicine.

This program addresses the theoretical-practical foundations of modern medicine to generate a global and deep vision of the new biomedical incorporations. Additionally, this program delves into bioprinting, biomedical imaging and the possibilities offered by artificial intelligence in pattern recognition in medical images.

TECH Global University has proposed this study with the collaboration of expert teachers in the health area and, in addition, instruct the specialists with their real experiences in the field of action. This is an innovative and 100% online degree, which applies the *Relearning*, methodology, so that nurses do not have to spend long hours memorizing the syllabus, but are able to assimilate it in a progressive and simple way. All this, so that the specialist integrates the *E-Health* tools in his profession and collaborates in its development.

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 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

Don't wait any longer, distinguish yourself as a specialist in a sector that has already incorporated E-Health platforms to personalize the healthcare service"

Boost your career thanks to bioinformatics computing and Big Data techniques, so that you master all fields of the healthcare area"

With this program you will understand the importance of massive data processing against epidemiological diseases.

Join the change in eHealth by applying artificial intelligence and the Internet of Things (IoT) to telemedicine.

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

The main purpose of the Professional Master's Degree in E-Health and Big Data is to broaden and update the knowledge of nursing graduates This degree goes into the techniques, recognition and intervention through biomedical imaging, as well as bioinformatics computing and databases so that, in addition to increasing their skills towards patients, they also know the tools to optimize the clinical record and its database. By delving into the technical aspects of the hospital system and mastering the tools to implement biomedical design in the healthcare area, the student will boost his or her professional career towards a future perspective of new technologies.

TECH Global University focuses on updating your nursing knowledge so that, together with other specialists, you can adapt to the technological paradigm"

General Objectives

- Develop key concepts of medicine that will serve as a vehicle for the understanding of 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 principles and good practices that govern the different types of health sciences research
- 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 *E-Health*Field
- 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

Analyze the effectiveness of the technological application in telemedicine to use biomechanical advances and surgical devices that promote improvement of those affected"

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 musculoskeletal system and diseases of 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 of dissemination of 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 the recognition of patterns in medical images, thus deepening innovation in the medical 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 mass data collection 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

After completing this Professional Master's Degree, students will be able to master the tools that streamline medical processes through biotechnology, in addition to knowing perfectly the health management system with *Big Data*techniques. Thanks to the collaboration of experienced teachers in the healthcare field, the specialist will be able to apply their knowledge in clinical practice and therefore intervene in successful healthcare market models, acting in accordance with healthcare ethics. These skills are in great demand in the field of e-health, telemedicine and biomedicine. All this, so that the student becomes a much more competitive professional in the modern scientific sector.

This Professional Master's Degree will provide you with knowledge in artificial intelligence so that, as a professional, you can apply it in your clinical practice"

General Skills

- The student will be able to analyze the functioning of the international health care system and the common medical and the usual medical processes
- Acquire an analytical and critical view of medical devices
- Gain the 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, knowing the applicable regulations and the steps to be followed
- Analyze massive patient data to provide concrete and clear information for medical decision making
- Use diagnostic systems to generate medical images, understanding their physical principles, use and scope
- Develop a global vision of the *e-Health* sector, with entrepreneurial input, which 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

Expand your skills to become an e-Health specialist and improve the quality of life of your patients"

04

Course Management

Given the scientific interest in new technologies and their application in nursing for the rehabilitation of patients, TECH Global University has resorted to a professional team trained in Biomedical Engineering, Medicine, Biotechnology, Intelligence and Innovation to teach this program. This teaching team is working in the field of biomedicine, among other areas, which provides assurance to students, so that they can be instructed under the rigor and quality that TECH Universidad Tecnológica pursues. It is a 100% online course of study, with downloadable materials. This means that, even after completing the degree, the specialist can consult the reference guide once they have saved it on their device.

You will be able to contact the teachers through a direct communication channel to resolve any questions you may have about the subject"

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, 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 Freedomb & 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 from Pontificia of Salamanca University
- 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 from Carlos III University of Madrid
- Master's Degree in Clinical Engineering from 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
- Doctorate in Biomedical Engineering, Polytechnic University of Madrid
- Degree in Biomedical Engineering, Polytechnic University of Madrid
- Master's Degree in Management and Development of Biomedical Technologies 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 in the Shoulder and Elbow Orthopedics Department and Sports Medicine from 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

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

The syllabus of this Professional Master's Degree in E-Health and Big Data has been developed by a team of experienced professionals in Health Sciences who will not only share their knowledge on the subject, but will also share their experience in the field to instruct specialists. Thanks to their contribution and the different audiovisual formats in which the contents are presented, students will learn in a dynamic and simple way about the healthcare system, molecular medicine, recognition through biomedical images and *Big Data* in medicine, among many other issues. For this purpose, TECH Global University applies the *Relearning*, methodology, which makes it possible to exempt specialists from long hours of memorization, assimilating the contents in a gradual and efficient manner.

Rely on an experienced teaching team in Health Sciences that will provide you with the keys to act in the healthcare field by applying E-Health"

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
2.1.3. 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
3.8.9. 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
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. *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. 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 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 the Healthcare Field 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-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. *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. ATM Asynchronous Transfer Mode
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. *Telehome-care*
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: Canvas Model
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

A program designed for professionals who want to master all the practical tools for entrepreneurship and innovation in their organization, someone like you"

06

Methodology

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

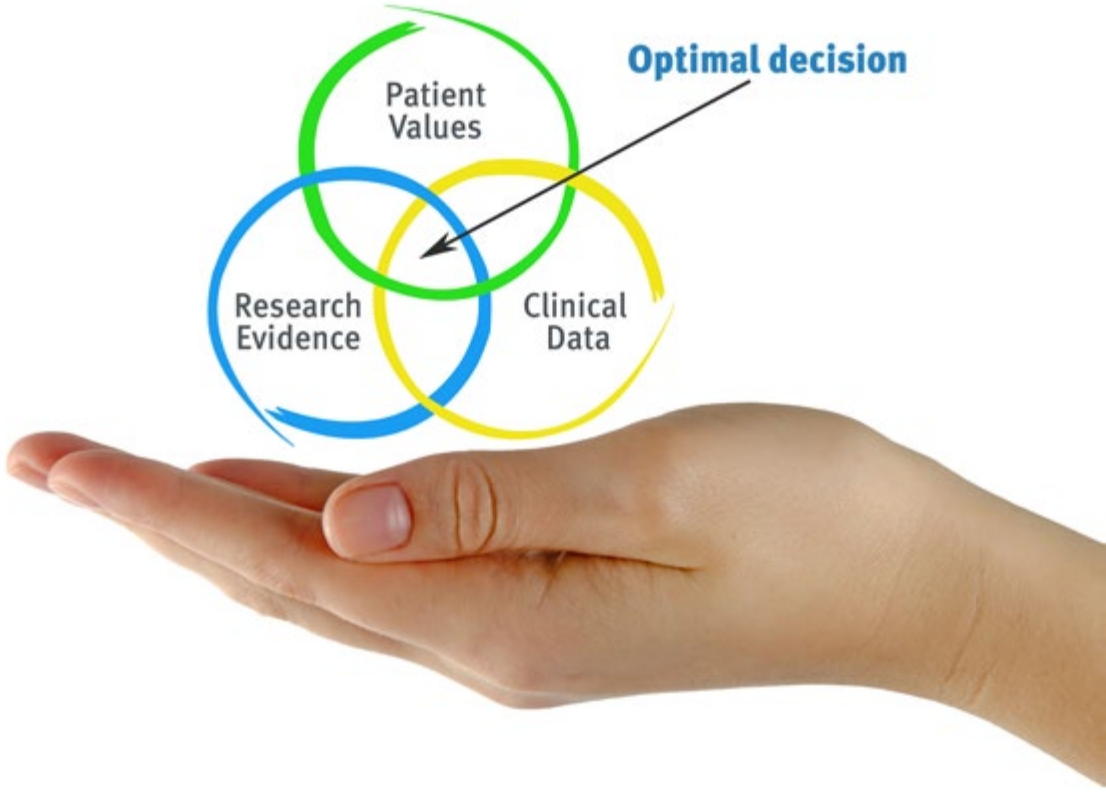
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the ***New England Journal of Medicine*** have considered it to be one of the most effective.

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 Nursing School we use the Case Method

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

With TECH, nurses can experience a learning methodology 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, in an attempt to recreate the real conditions in professional nursing 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:

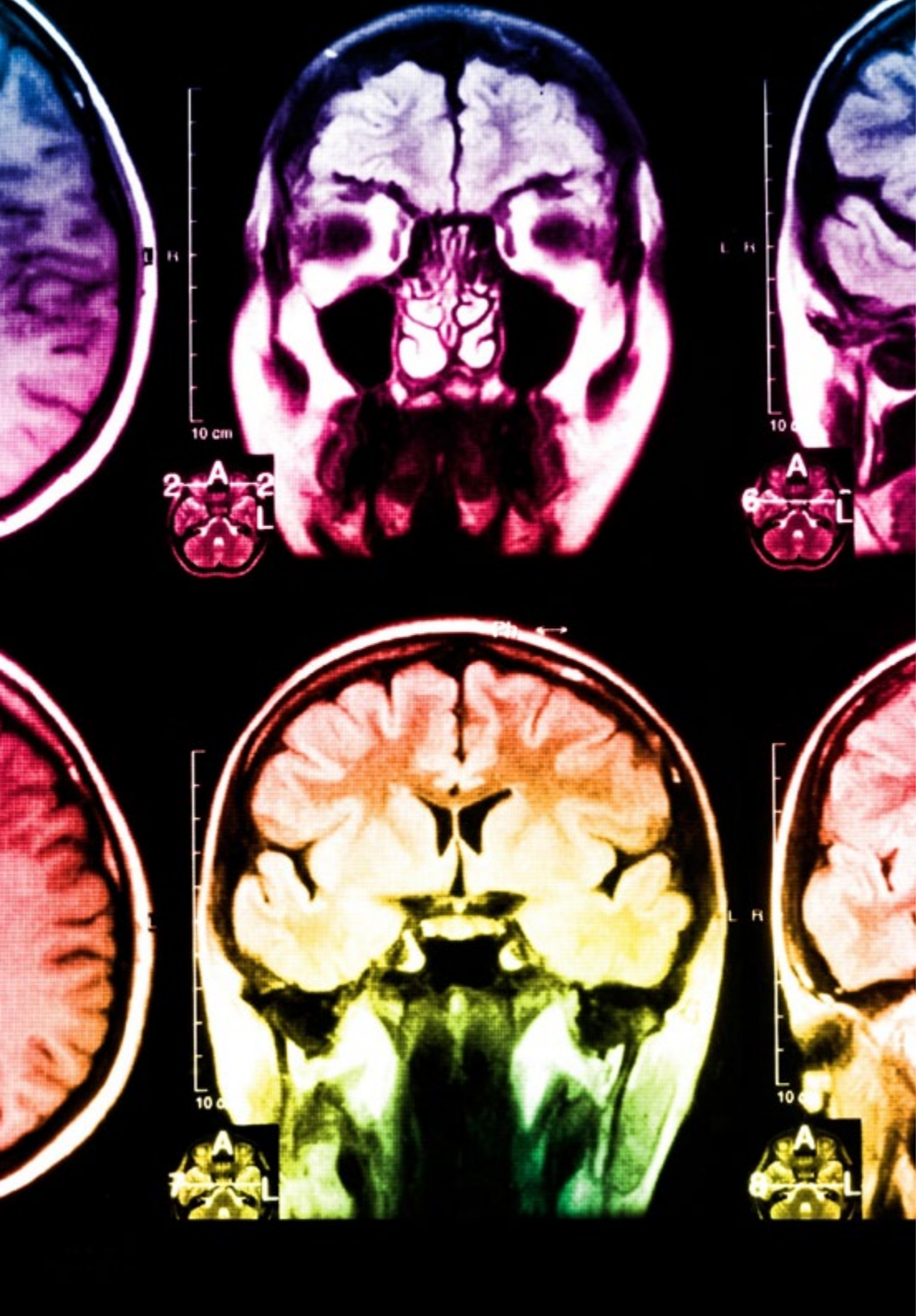
1. Nurses who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.
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 case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.

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



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

With this methodology we have trained more than 175,000 nurses with unprecedented success in all specialities regardless of practical workload. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

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

Nursing Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, 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 them as many times as you want.

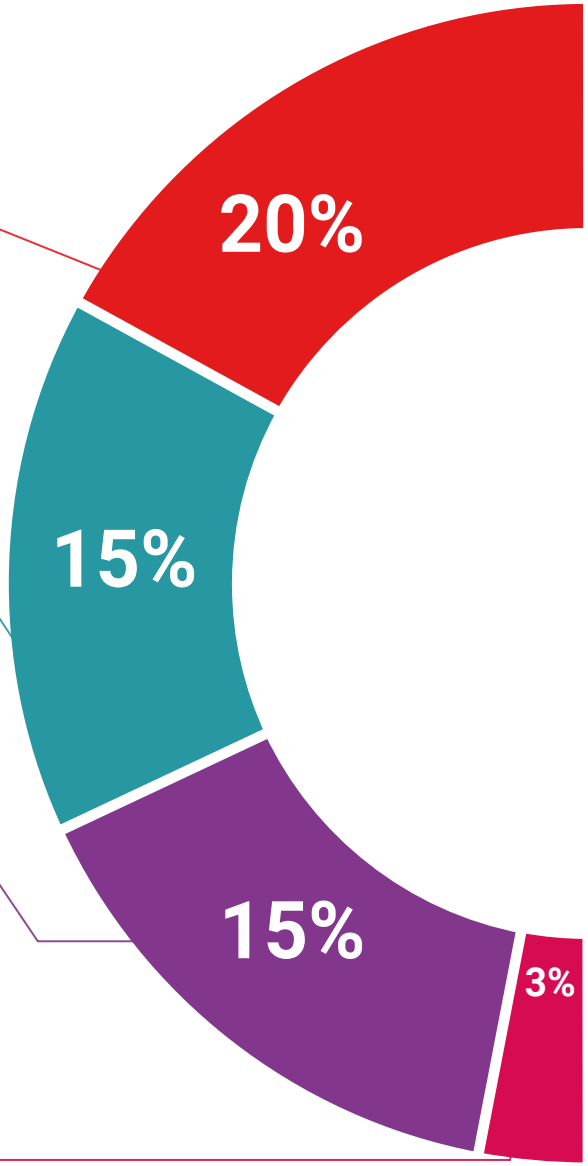
Interactive Summaries

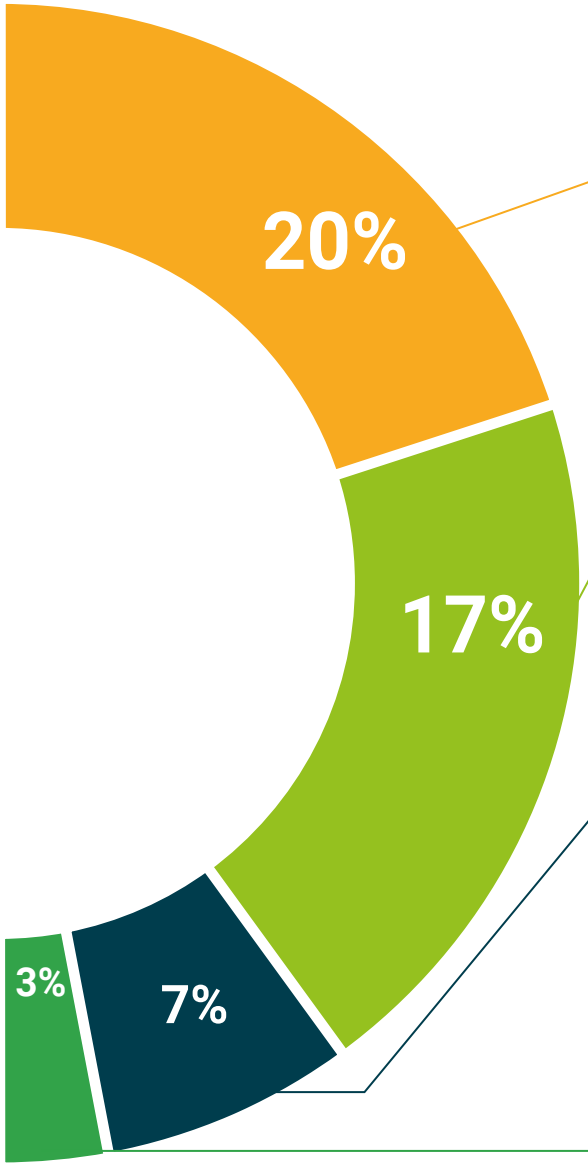
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Additional Reading

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





Expert-Led Case Studies and Case Analysis

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

Testing & Retesting

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

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

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

Quick Action Guides

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

07

Certificate

The Professional Master's Degree in 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

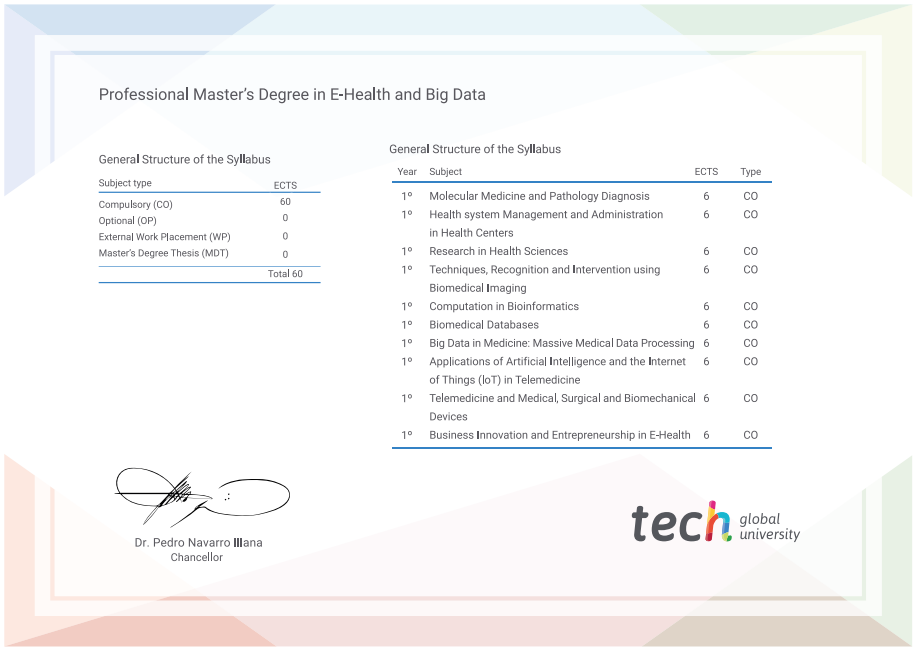
This is a program of 1,500 hours of duration equivalent to 60 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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
Rector

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

General Structure of the Syllabus

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
Chancellor

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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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