

Postgraduate Certificate

Management and Analysis of Biomedical Information and Scientific Literature with Artificial Intelligence



Postgraduate Certificate Management and Analysis of Biomedical Information and Scientific Literature with Artificial Intelligence

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/pharmacy/postgraduate-certificate/management-analysis-biomedical-information-scientific-literature-artificial-intelligence

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01

Introduction to the Program

Biomedical Information Management and Analysis, together with the review of scientific literature, are fundamental pillars for the advancement of medical research and the development of new treatments. According to the WHO, biomedical research is essential to address global challenges, such as infectious and chronic diseases, which account for 70% of deaths worldwide. In a world where the amount of biomedical and scientific data is growing exponentially, having the right tools to manage and analyze it is essential for research and treatment development. For this reason, TECH has developed this 100% online postgraduate program, which will provide the knowledge and skills necessary to integrate AI in the analysis of large volumes of health and scientific information.



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If you want to be at the forefront of Medical Science, now is the time to take the next step. Join TECH and transform the way the world understands Medicine. You will learn 100% online!”

The Management and Analysis of Biomedical Information and Scientific Literature with AI is fundamental to face the current challenges in Medicine and scientific research. With the growing volume of biomedical data available, from electronic health records to genomic research results, it is essential to have advanced tools to organize, process and analyze these data efficiently. In short, this aspect opens new doors to the personalization of treatments and the improvement of health outcomes at a global level.

Against this backdrop, TECH has designed this program in Management and Analysis of Biomedical Information and Scientific Literature with AI, which will offer professionals a unique opportunity to acquire key knowledge in a constantly evolving area within healthcare research. Moving forward, pharmacists will develop key skills to organize, process and analyze biomedical data, including electronic health records and genomic research results, efficiently and accurate manner. As they advance, pharmacists will develop key skills to organize, process and analyze biomedical data, including electronic health records and genomic research results, efficiently and accurately.

Upon completion, graduates will be better positioned to contribute to the advancement of Medical Science and perform effectively in a highly competitive and technologically advanced environment. In addition, they will be able to perform in roles in scientific research institutions and technological companies that specialize in health.

Likewise, the 100% online mode of this program will offer a flexible, efficient learning experience that is completely adapted to the needs of the students. In turn, this will be complemented with the innovative Relearning methodology, a pedagogical strategy that optimizes the academic process by reinforcing key concepts in a progressive manner. Thanks to these advantages, they will have the opportunity to internalize knowledge in a natural and effective way, avoiding the information saturation typical of traditional methods.

The **Postgraduate Certificate in Management and Analysis of Biomedical Information and Scientific Literature with Artificial Intelligence** contains the most complete and up-to-date scientific program the market. Its most notable features are:

- ♦ The development of case studies presented by experts with a deep understanding of Management and Analysis of Biomedical Information and Scientific Literature with Artificial Intelligence
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable 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



The combination of flexibility, innovation and effectiveness make this program the ideal choice for career advancement in the field of biomedical information analysis and Artificial Intelligence"

“

Do you want to become an expert in biomedical analysis with AI? With this program, you will gain access to an updated curriculum designed to master advanced tools and transform data into healthcare solutions”

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

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

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the course. For this purpose, students will be assisted by an innovative interactive video system created by renowned experts.

Thanks to this postgraduate course, you will manage and analyze large volumes of scientific data with the support of experts and TECH's innovative methodology. Take the next step in your career!

Your future in research starts at TECH! You will learn with the best teachers and a methodology based on Relearning, which guarantees practical and effective results.



02

Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs, available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it has a huge faculty of more than 6,000 professors of the highest international prestige.



“

Study at the largest online university in the world and ensure your professional success. The future begins at TECH”

The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future"

The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.



The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.



The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.



03 Syllabus

This academic itinerary will offer a comprehensive and updated training, designed for specialists to master the most advanced tools and techniques in the Management and Analysis of Biomedical Information and Scientific Literature with AI. Through a carefully structured syllabus, they will address from the basics of Artificial Intelligence applied to biomedical research, to the most effective strategies for the review of scientific literature. In this way, graduates will acquire specialized knowledge that will enable them to identify, process and apply scientific information with precision, contributing to the advancement of personalized medicine and the improvement of health outcomes.



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With the flexibility of a 100% online program and a fully updated curriculum, you'll be prepared to lead in a key field in the medicine of tomorrow.

Module 1. Management and Analysis of Biomedical Information and Scientific Literature with Artificial Intelligence

- 1.1. Introduction to the Use of AI for Biomedical Information
 - 1.1.1. Importance of Biomedical Information in Pharmacy
 - 1.1.2. Challenges in the Management and Analysis of the Scientific Literature
 - 1.1.3. Role of AI in the Management of Large Volumes of Scientific Data
 - 1.1.4. Examples of AI Tools such as Semantic Scholar in Biomedical Research
- 1.2. Biomedical Information Retrieval with AI
 - 1.2.1. Advanced Searching Techniques in Scientific Databases
 - 1.2.2. AI Algorithms to Improve Search Accuracy and Relevance
 - 1.2.3. Personalization of Results through Machine Learning
 - 1.2.4. Applications such as PubMed AI for Efficient Information Retrieval
- 1.3. Natural Language Processing (NLP) in Scientific Texts
 - 1.3.1. NLP Applications in the Analysis of Biomedical Literature
 - 1.3.2. Automatic Extraction of Key Information from Scientific Articles
 - 1.3.3. Automatic Summarization and Generation of Structured Abstracts
 - 1.3.4. Tools such as SciBERT for Scientific Text Processing
- 1.4. Biomedical Text Mining
 - 1.4.1. Basic Concepts and Techniques in Text Mining
 - 1.4.2. Identification of Trends and Patterns in Scientific Publications
 - 1.4.3. Extraction of Relationships between Biomedical Entities
 - 1.4.4. Examples such as MEDLINE and Text Mining Library for Text Mining
- 1.5. Ontologies and Semantic Annotations in Biomedicine
 - 1.5.1. The Use and Creation of Ontologies in the Health Sciences
 - 1.5.2. Semantic Annotation of Scientific Documents
 - 1.5.3. AI for Semantic Enrichment and Contextual Searching
 - 1.5.4. Tools such as BioPortal and UMLS for Ontological Management
- 1.6. Scientific Literature Recommender Systems
 - 1.6.1. Recommendation Algorithms in Scientific Platforms
 - 1.6.2. Personalization of Content for Researchers and Practitioners
 - 1.6.3. AI in Predicting Future Relevance and Citations
 - 1.6.4. Applications such as Mendeley Suggest and ResearchGate





- 1.7. Visualization of Biomedical Data and Knowledge
 - 1.7.1. Visualization Techniques for Complex Biomedical Data
 - 1.7.2. Knowledge Maps and Research Networks
 - 1.7.3. AI Tools to Visualize Relationships and Trends
 - 1.7.4. Examples such as VOSviewer and Cytoscape in Scientific Visualization
- 1.8. AI-Assisted Knowledge Discovery
 - 1.8.1. Identification of New Hypotheses from Existing Data
 - 1.8.2. Integration of Multidisciplinary Data with AI
 - 1.8.3. Prediction of Unknown Drug Interactions and Pharmacological Effects
 - 1.8.4. Cases such as IBM Watson Discovery and Elsevier's Entellect
- 1.9. Big Data Management in Biomedical Research
 - 1.9.1. Challenges of Big Data in Biomedical Research
 - 1.9.2. Efficient Storage and Processing of Massive Data
 - 1.9.3. AI for Genomic and Proteomic Data Analysis
 - 1.9.4. Tools such as Apache Hadoop and Spark in Biomedicine
- 1.10. Challenges and Future Perspectives in NLP for Scientific Literature
 - 1.10.1. Specific NLP Challenges in Scientific and Biomedical Data
 - 1.10.2. Limitations in Search and Analysis Automation
 - 1.10.3. Recent Advances in NLP for Biomedical Sciences (BioGPT, BioBERT)
 - 1.10.4. Future Applications of AI in Scientific Research and Publication

“*TECH will guarantee you a dynamic and progressive training that will enhance your professional career. With an innovative approach you will prepare yourself to excel in a key sector for the future of Medicine!*”

04

Teaching Objectives

The main goal of this program is to train professionals to face the challenges of a sector in constant evolution. Therefore, they will acquire key and strategic skills to manage large volumes of scientific and biomedical information, optimizing their analysis through advanced AI tools. Likewise, graduates will know how to integrate innovative AI techniques in biomedical data processing, facilitating the identification of key patterns for decision making in research and development. Finally, they will specialize in the review and synthesis of scientific literature to generate applicable knowledge in medical and academic contexts.



“

Do you want to make informed, evidence-based decisions in data management with AI? This program will open new doors to personalizing treatments and improving health outcomes globally”



General Objectives

- Apply artificial intelligence tools in the analysis of biomedical data
- Interpret scientific literature using advanced technologies to extract relevant information
- Optimize the efficient management of large volumes of biomedical data
- Design analysis strategies that integrate artificial intelligence and biomedicine
- Identify patterns and relationships in biomedical data using machine learning techniques
- Improve clinical and research decision making through data analytics
- Implement AI-based solutions to accelerate biomedical research processes
- Integrate scientific and technological knowledge in solving complex biomedical problems





Specific Objectives

- ♦ Master the use of AI software and tools to process biomedical data and scientific literature
- ♦ Analyze scientific studies to identify trends and opportunities in biomedical research
- ♦ Design structured databases to facilitate the efficient management of biomedical information
- ♦ Implement machine learning algorithms to extract relevant patterns in health data

“

With this postgraduate course, you will acquire knowledge and skills in a more effective and fluid way! Thanks to the Relearning methodology, you will experience a more dynamic and interactive training approach”

05

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



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TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes
(which you might not be able to attend)”*



The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want*”

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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.



A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"

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 assess 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.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.



As such, the best educational materials, thoroughly prepared, will be available in this program:



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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

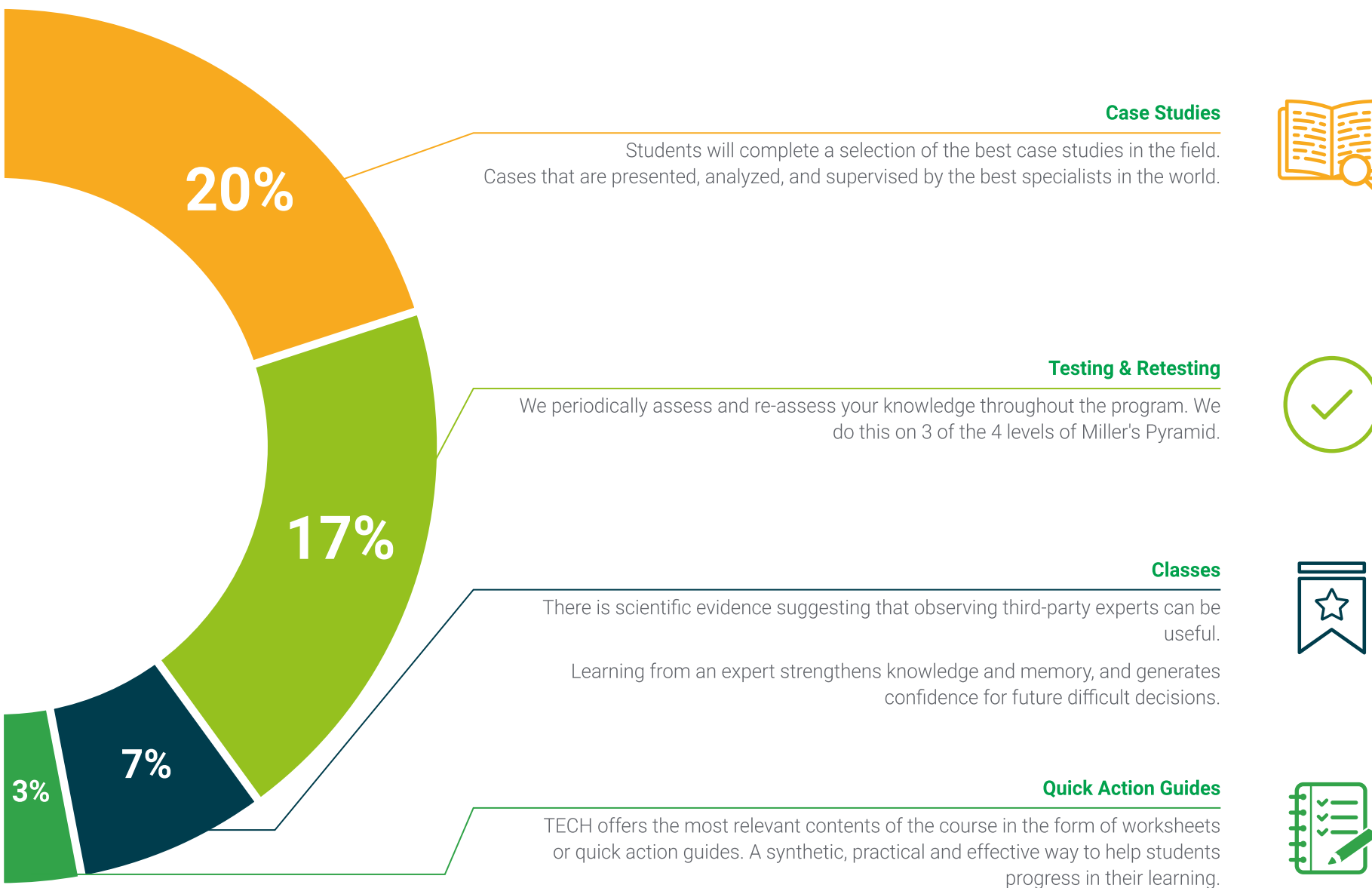
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





06

Teaching Staff

The faculty of this program is composed of renowned professionals in the field of Biomedicine, Artificial Intelligence and scientific research. TECH has ensured that each member has both practical and academic experience, guaranteeing that the student body receives cutting-edge training that aligns with the needs of the industry. In addition to having experts in AI and Biotechnology, the mentors have a solid background in renowned international institutions, ensuring a global and up-to-date approach to the content.



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Thanks to these teachers, you will train with the best and take a safe step into the future of medical research. You will be prepared to face the most complex challenges of Biomedical Science and digital health!”

Management



Dr. Peralta Martín-Palomino, Arturo

- ♦ CEO and CTO at Prometheus Global Solutions
- ♦ CTO at Korporate Technologies
- ♦ CTO at AI Shepherds GmbH
- ♦ Consultant and Strategic Business Advisor at Alliance Medical
- ♦ Director of Design and Development at DocPath
- ♦ Doctorate in Psychology from the University of Castilla La Mancha
- ♦ Doctorate in Economics, Business and Finance from the Camilo José Cela University
- ♦ Doctorate in Psychology from University of Castilla La Mancha
- ♦ Master's Degree in Executive MBA from the Isabel I University
- ♦ Master's Degree in Sales and Marketing Management from the Isabel I University
- ♦ Expert Master's Degree in Big Data by Hadoop Training
- ♦ Master's Degree in Advanced Information Technologies from the University of Castilla La Mancha
- ♦ Member of: SMILE Research Group



“

Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice”

07 Certificate

This Postgraduate Certificate in Management and Analysis of Biomedical Information and Scientific Literature with Artificial Intelligence guarantees, in addition to the most rigorous and up-to-date program, access to an Postgraduate Certificate diploma issued by TECH Global University.



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

This private qualification will allow you to obtain a diploma for the **Postgraduate Certificate in Management and Analysis of Biomedical Information and Scientific Literature with Artificial Intelligence** 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** private qualification, 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: **Postgraduate Certificate in Management and Analysis of Biomedical Information and Scientific Literature with Artificial Intelligence**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





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Postgraduate Certificate

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