Postgraduate Diploma

Application of Artificial Intelligence Techniques for the Teaching Profession

tech technological university

tech universidad tecnológica

Postgraduate Diploma
Application of Artificial Intelligence Techniques for the Teaching Profession

- » Modality: **online**
- » Duration: **6 months**
- » Certificate: **TECH Technological University**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: **www.techtitute.com/us/education/postgraduate-diploma/postgraduate-diploma-application-artificial-intelligence-techniques-teaching-profession**

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01
Introduction

The implementation of Artificial Intelligence (AI) techniques in teaching has a significant impact on education. This system serves to personalize learning processes by adapting content to the individual needs of students. Students will progress at their own pace and address their specific areas of weakness. In addition, Machine Learning tools provide immediate feedback to learners on their performance on both assignments and assessments. This will enable them to locate and correct errors in a timely manner, which promotes more effective teaching. In this context, TECH has developed a 100% online university program that will delve into the development of AI projects in the classroom.

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You will delve into the personalization of learning with Artificial Intelligence at the best digital university in the world, according to Forbes"

The development of learning materials with generative AI has the potential to revolutionize education by enabling the automatic generation of high-quality, personalized educational content. For example, algorithms such as GPT-3 can generate explanations, exercises and examples in an automated way. This is useful for creating specific reading materials, study guides and exercises for each student. AI also produces multimedia materials such as graphics, animations and videos to improve knowledge retention.

For this reason, TECH is launching a Postgraduate Diploma that will focus on teaching practice with generative AI. The syllabus will analyze in detail strategies for implementing projects in the classroom, using the most sophisticated technological tools. The syllabus will also delve into the identification, extraction and preparation of educational data. In this line, the program will use *Machine Learning* techniques to interpret trends and patterns. Likewise, the university program will provide multiple case studies of successful predictions in educational environments. In this way, teaching professionals will be qualified to successfully address challenges in the classroom.

As for the methodology of this program, it should be noted that it reinforces its innovative character. TECH provides students with a 100% online educational environment, adapting to the needs of busy professionals who want to advance their careers. It also uses the *Relearning*teaching system, based on the repetition of key concepts to fix knowledge and facilitate learning. In this way, the combination of requirement for students is that they have an electronic device with Internet access (such as a cell phone, computer or *tablet*) to access the Virtual Campus and access the most innovative didactic material.

This **Postgraduate Diploma in Application of Artificial Intelligence Techniques for the Teaching Profession** contains the most complete and up-to-date program on the market. The most important features include:

- The development of case studies presented by experts in Application of Artificial Intelligence Techniques for the Teaching Profession
- The graphic, schematic and practical contents of the book provide theoretical and practical information on those 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

You will design teacher quality evaluation surveys and take advantage of student feedback to optimize your educational proposals"

"Looking to enrich your educational decision-making? Get it thanks to the Intelligent Automation tools that this program will provide you with"

You will effectively manage data analysis to prevent and solve educational problems.

Forget about memorizing! With the Relearning system you will integrate the concepts in a natural and progressive way.

The program's teaching staff includes professionals from the sector who contribute their work experience to this 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 academic year For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02
Objectives

This university program will provide graduates with a comprehensive approach to the applications of Machine Learning in educational environments, promoting high quality teaching practice. Students will implement the most innovative technologies to their usual procedures in order to improve student performance. On the other hand, professionals will detect the specific needs of students and apply specific actions to promote the teaching process. In addition, they will develop tools such as *chatbots* to solve students' doubts. In addition, they will use generative AI to correct evaluative tests, which will considerably speed up these procedures.

You will design didactic projects that will stand out for their dynamism and will allow your students to enrich their learning"

General Objectives

- Understand the fundamental ethical principles related to the application of Artificial Intelligence (AI) in educational settings

- Analyze the current legislative framework and the challenges associated with the implementation of AI in educational settings

- Develop critical skills to evaluate the ethical and social impact of AI in education

- Encourage the responsible design and use of AI solutions in educational contexts, considering cultural diversity and gender equity

- Train in the design and implementation of AI projects in the educational environment

- Provide an in-depth understanding of the theoretical foundations of AI, including machine learning, neural networks, and natural language processing

- Develop skills to integrate AI projects effectively and ethically into the educational syllabus

- Understand the applications and impact of AI in teaching and learning, critically assessing its current and potential uses

- Apply generative AI to personalize and enrich teaching practice, creating adaptive educational materials

- Identify, evaluate, and apply the latest trends and emerging technologies in AI relevant to education, reflecting on their challenges and opportunities

Specific Objectives

Module 1. Data analysis and application of AI techniques for educational personalization

- Apply AI in the analysis and evaluation of educational data to drive continuous improvement in educational settings

- Define academic performance indicators based on educational data to measure and improve student performance

- Implement AI technologies and algorithms to perform predictive analytics on academic performance data

- Perform personalized diagnostics of learning difficulties through data analysis with AI, identifying particular educational needs and designing targeted interventions

- Address security and privacy in the processing of educational data when applying AI tools, ensuring regulatory and ethical compliance

Module 2. Development of Artificial Intelligence Projects in the Classroom

- Plan and design educational projects that effectively integrate AI in educational environments, mastering specific tools for its development

- Design effective strategies to implement AI projects in learning environments, integrating them in specific subjects to enrich and improve the educational process

- Develop educational projects applying machine learning to improve the learning experience, integrating AI in the design of educational games in playful learning

- Create educational *chatbots* to assist students in their learning processes and resolution of doubts, including intelligent agents in educational platforms to improve interaction and teaching

- Perform continuous analysis of AI in Education projects to identify areas for improvement and optimization

Module 3. Teaching Practice with Generative Artificial Intelligence

- Master generative AI technologies for their application and effective use in educational environments, planning effective educational activities

- Create didactic materials using generative AI to improve the quality and variety of learning resources, as well as to measure student progress in innovative ways

- Use generative AI to correct activities and evaluative tests, streamlining and optimizing this process

- Integrate generative AI tools in pedagogical strategies to improve the effectiveness of the educational process and design inclusive learning environments, under the universal design approach

- Evaluate the effectiveness of generative AI in education, analyzing its impact on teaching and learning processes

03
Course Management

TECH includes in all its university programs the support of a faculty formed by specialized teams in the area of study. For this reason, for this Postgraduate Diploma, TECH has selected a team of teachers with a wide and extensive experience who provide students with the experience of their professional background. In this way, graduates will be able to learn from their experience, as well as from the practice in the most current context to update and implement new strategies in the development of their educational practice.

"

An experienced teaching staff will guide you throughout the learning process and will resolve any doubts that may arise"

Management

Dr. Peralta Martín-Palomino, Arturo

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

Mr. Nájera Puente, Juan Felipe

- Data Analyst and Data Scientist
- Director of Studies and Research at the Council for Quality Assurance in Higher Education
- Production Programmer at Confiteca C.A
- Processes Consultant at Esefex Consulting
- Academic Planning Analyst at San Francisco de Quito University
- Professional Master's Degree in *Big Data* and Data Science at the International University of Valencia
- Industrial Engineer from San Francisco de Quito University

Professors

Ms. Martínez Cerrato, Yésica
- Education, Business and Marketing Specialist
- Responsible for Technical Training at Securitas Seguridad España
- *Product Manager* in Electronic Security at Securitas Seguridad España
- Business Intelligence Analyst at Ricopia Technologies
- Computer Technician and Head of OTEC Computer Classrooms at the University of Alcalá de Henares
- Collaborator in the ASALUMA Association
- Degree in Electronic Communications Engineering at the Polytechnic School, University of Alcalá de Henares, Madrid

Structure and Content

This Postgraduate Diploma will provide students with a comprehensive approach to the development of AI projects in the educational context. To achieve this, the syllabus will provide students with the most innovative tools to make informed decisions. In addition, the syllabus will delve into a variety of algorithms for predictive data analysis, corresponding to academic performance. In this sense, the program will focus on how AI contributes to the evaluation and personalization of teaching. It will also provide keys for the application of pedagogical strategies, aimed at correcting activities and developing teaching materials.

This Postgraduate Diploma combines teaching excellence with the technological revolution of Machine Learning, to keep you at the forefront of education"

Module 1. Data analysis and application of AI techniques for educational personalization

1.1. Identification, Extraction and Preparation of Educational Data
- 1.1.1. Methods of Collection and Selection of Relevant Data in Educational Settings
- 1.1.2. Data Cleaning and Normalization Techniques for Educational Analyses
- 1.1.3. Importance of Data Integrity and Quality in Educational Research

1.2. Analysis and Evaluation of Educational Data with AI for Continuous Improvement in the Classroom
- 1.2.1. Use of *Machine Learning* Techniques to Interpret Educational Trends and Patterns
- 1.2.2. Evaluating the Impact of Pedagogical Strategies using Data Analytics
- 1.2.3. Integration of AI-based Feedback for the Optimization of the Teaching Process

1.3. Definition of Academic Performance Indicators from Educational Data
- 1.3.1. Establishment of Key Metrics for Evaluating Student Achievement
- 1.3.2. Comparative Analysis of Indicators to Identify Areas for Improvement
- 1.3.3. Correlation Between Academic Indicators and External Factors Using AI

1.4. AI Tools for Educational Decision Making and Monitoring
- 1.4.1. AI-based Decision Support Systems for Educational Administrators
- 1.4.2. Role of AI in Educational Resource Planning and Allocation
- 1.4.3. Optimization of Educational Processes through Predictive Analytics

1.5. AI Technologies and Algorithms for Predictive Analysis of Academic Achievement Data
- 1.5.1. Fundamentals of Predictive Modeling in Education
- 1.5.2. Use of Classification and Regression Algorithms to Predict Trends in Education
- 1.5.3. Case Studies of Successful Predictions in Educational Environments

1.6. Application of Data Analytics with AI for the Prevention and Solution of Educational Problems
- 1.6.1. Early Identification of Academic Risks through Predictive Analytics
- 1.6.2. Data-driven Intervention Strategies to Address Educational Challenges
- 1.6.3. Assessing the Impact of AI-based Solutions in Education

1.7. Personalized Diagnosis of Learning Difficulties from Data Analytics with AI
- 1.7.1. AI Techniques for the Identification of Learning Styles and Learning Difficulties
- 1.7.2. Integration of Data Analysis into Individualized Educational Support Plans
- 1.7.3. Case Studies of Diagnoses Improved by the Use of AI

Module 2. Development of Artificial Intelligence Projects in the Classroom

05
Methodology

This training program offers 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 Education School we use the Case Method

In a given situation, what should a professional do? Throughout the program students will be presented with multiple simulated cases based on real situations, where they will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method.

With TECH, educators can experience a learning methodology that is shaking the foundations of traditional universities around the world.

It is a technique that develops critical skills and prepares educators to make decisions, defend their arguments, and contrast opinions.

"

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. Educators 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 is solidly focused on practical skills that allow educators to better integrate the knowledge into daily practice.

3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life teaching.

4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

Relearning Methodology

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

Our University is the first in the world to combine case studies with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.

Educators 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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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 85,000 educators with unprecedented success in all specialties. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

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

Educational Techniques and Procedures on Video

TECH introduces students to the latest techniques, with the latest educational advances, and to the forefront of Education. All this, first-hand, with the maximum rigor, explained and detailed for your 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 multimedia content presentation training Exclusive system was awarded by Microsoft as a "European Success Story".

Additional Reading

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

20%

15%

15%

3%

20%

17%

7%

3%

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 your 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.

06

Certificate

The Postgraduate Diploma in Application of Artificial Intelligence Techniques for the Teaching Profession guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.

"*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork*"
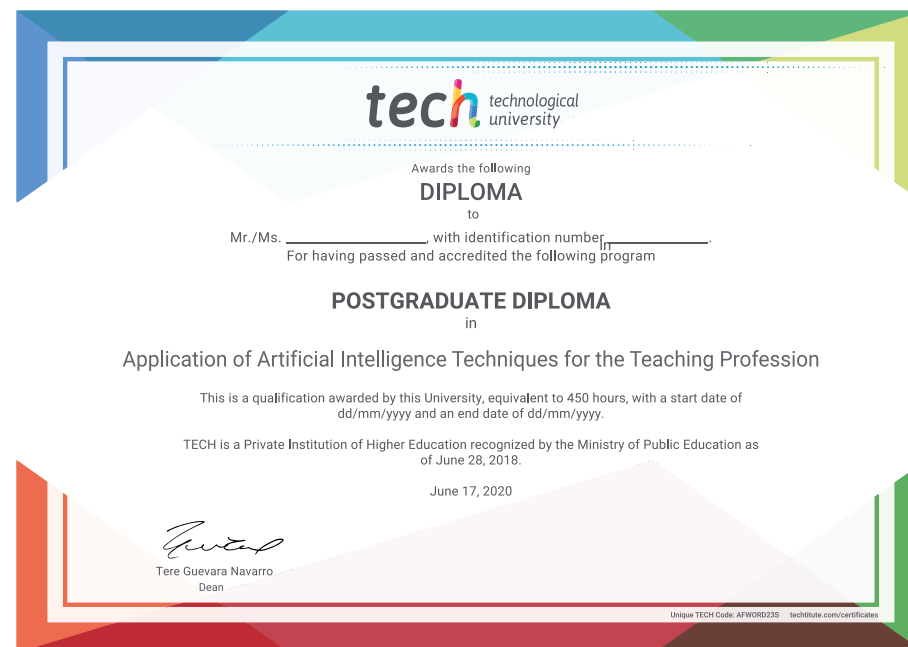
This **Postgraduate Diploma in Application of Artificial Intelligence Techniques for the Teaching Profession** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Application of Artificial Intelligence Techniques for the Teaching Profession**

Official Nº of Hours: **450 h.**

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Awards the following

DIPLOMA

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Application of Artificial Intelligence Techniques for the Teaching Profession

This is a qualification awarded by this University, equivalent to 450 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

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

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