Structuralia
Engineering eLearning

UNIVERSIDAD
NEBRIJA

Master´s Degree in Artificial Intelligence. Model Management and Implementation + 60 ECTS Credits





Choose to learn at school
leader in online training

INDICE

1 | About **Structuralia**

2 | **Alliance**

3 | **Rankings**

4 | By **EDUCA EDTECH Group**

5 | LXP **Methodology**

6 | **Why choosing** Structuralia?

7 | Trainning **program**

8 | **List of Subjects**

9 | **Contact**

ABOUT STRUCTURALIA

Structuralia is an online educational institution offering highly specialized postgraduate programs in engineering, infrastructure, construction, energy, building, digital transformation, and new technologies. Since our founding in 2001, we have been committed to providing quality training for the professional development of **engineers, architects, and STEM professionals.**

We provide a platform where you can acquire new skills and enhance your knowledge without being limited by time or location. Our methodology ensures an engaging, interactive, and **supportive educational experience,** equipping our students to meet future challenges in their respective fields of work.

More than **20** years of experience

Over **200k** student have learnt with us

More than **90** nationalities among our students



Specialize to
advance your career

STRUCTURALIA ALLIANCE AND NEBRIJA UNIVERSITY

Structuralia and the University of Nebrija successfully consolidate a strategic partnership. Thus, the collaboration between Structuralia and the University of Nebrija promotes a collaborative, innovative and accessible approach towards learning that is adapted to the individual needs of students.

The two institutions prioritize practical and flexible learning, adapted to the demands of today's working world, and which promotes the personal and professional development of each student. The purpose is to acquire new knowledge in a dynamic and didactic way, which facilitates its retention and contributes to developing the necessary skills to be ready to take part in a society in constant and rapid transformation.

Structuralia and the University of Nebrija have set as their main objective the democratization of education to bring it to even the most remote areas and taking advantage of the latest technological innovations. In addition, they have a team of highly specialized teachers and learning platforms that incorporate cutting-edge educational technology to provide academic support throughout the entire educational process.



STRUCTURALIA RANKINGS

Structuralia has achieved the recognition of different national and international rankings, thanks to its commitment to **democratize education** and bet on educational innovation to **achieve excellence.**

For the elaboration of these rankings, **indicators** such as online and offline reputation, the quality of the institution, social responsibility, educational innovation or the profile of professionals are used.















QS, seal of academic excellence

Structuralia: 5 stars in online education

BY EDUCA EDTECH

Structuralia is a brand endorsed by **EDUCA EDTECH Group,** which is composed of a group of experienced and recognized **educational institutions of online training.** All the entities that make it up share the mission of **democratizing access to education** and are committed to knowledge transfer, technological development and research.

EDUCA EDTECH Group

ONLINE EDUCATION

EUROINNOVA INTERNATIONAL ONLINE EDUCATION

inesem business school

INEAF BUSINESS SCHOOL

red educa.net

inesalud

EDU SPORT

EDUCA business school

ESIBE ESCUELA IBEROAMERICANA DE POSTGRADO

Educa.Pro

ceupe European Business School

UDAVINCI

CAPMAN testing solutions

Structuralia Engineering eLearning

UNIMIAMI International University of Miami

Educa PHAROS

LXP METHODOLOGY

The **EDUCA LXP** methodology enhances the learning experience by incorporating AI into e-learning processes. It utilizes highly customized predictive models based on the analysis of student interactions with their virtual environments.

EDUCA LXP is the outcome of **Research Results Transfer** from multiple interdisciplinary R&D+i projects, involving international universities dedicated to knowledge transfer, technological development and research.



1. Flexibility

100% online and flexible learning, allowing students to study where, when and how they want.



2. Accessibility

We believe in making education accessible to all, working to ensure that everyone has the opportunity to continue their learning journey.



3. Personalization

We offer customized learning paths tailored to each student's unique needs and preferences.



4. Accompaniment / Academic mentoring

Guidance and support. Our team of expert teachers provides academic guidance, advocating for educational quality and adapting to the needs of the ever-changing labor market.



5. Innovation

We are at the forefront of technological development, constantly evolving with AI-driven Learning Experience Platforms.



6. Educational excellence

Our didactic approach focuses on competence based learning, promoting practical and meaningful learning experiences to ensure professional development.



Programs

Our own university and official programs

WHY CHOOSIG STRUCTURALIA

1. Our Experience

- ✓ More than **20 years of experience**.
- ✓ More than **200.000 students** have already learnt in our virtual classrooms.
- ✓ More than **90 nationalities** among our student body.

2. Our Team

Currently, Structuralia has a team of **more than 550 professionals working in the STEM (Science, Technology, Engineering and Mathematics)**. Our staff is solidly framed in a structure that facilitates the highest quality in the attention to students.

3. Our Methodology



100% ONLINE

Study at your convenience, wherever you are. Access our virtual campus from any device.



LEARNING

We strive for a deep integration of new knowledge into your cognitive framework.



TEAM TEACHERS

Structuralia has a team of professionals to elevate your study experience with topquality education.



NOT BE ALONE

Receive continuous guidance from our tutoring team throughout your student journey.

4. AENOR Quality

- ✓ We are Collaboration Agency Nº99000000169 authorized by the Ministry of Employment and Social Security.
- ✓ Annual external audits are carried out to ensure the highest quality by AENOR.
- ✓ Our teaching processes are certified by AENOR under ISO 9001.

Master´s Degree in Artificial Intelligence. Model Management and Implementation + 60 ECTS Credits



LENGHT
1500 horas



MODE
ONLINE



ASSISTANCE
PERSONALIZED



CREDIT
60 ECTS

Certificacion

Master´s Degree in Artificial Intelligence. Model Management and Implementation with 60 ECTS Credits awarded by the Antonio de Nebrija University. Teaching not leading to an officially accredited qualification



Description

This Master's degree has been conceived to respond to the growing need for knowledge and skills in the development of AI models and algorithms demanded by today's technology-driven market. As a matter of fact, many specialized staffing companies point to AI as one of the knowledge assets that will be the most demanded in the coming years, considering that the AI sector is expected to have a global business volume of 16 trillion dollars by 2030. This program has been designed to benefit all professional profiles, with an Introduction to AI basics that does not require extensive prior knowledge of programming and statistics. It has been structured in two large sections: first, a technical section which explores the main Machine Learning and Deep Learning models and algorithms, and the second section addresses its business applications and implications. Upon completion of the program, the students will have the necessary skills to manage and promote AI projects.

Goals

The overall objective is to equip students with the necessary knowledge and tools to understand, manage and lead IA initiatives and projects in an organization. The overall objective can be attained through the following specific objective: 1. Understand AI basic concepts, its limits, and possibilities. 2. Learn AI project programming languages, tools and platforms 3. Become familiar with the most used Machine Learning and Deep Learning algorithms 4. Analyze and learn other technologies to be able to develop innovative and differential business models. 5. Learn the main AI project management methodologies 6. Understand the implications and applications of AI in the different functional areas of a company

What does it prepare you for?

AI is currently one of the cross-cutting sectors with the most influence in all functional aspects of a business, hence why this master's degree is intended for any professional with an interest in new technologies, especially those who wish to manage projects and lead organizational initiatives. Furthermore, this program is suitable for department directors or coordinators who wish to update their current knowledge and avoid falling behind in terms of their interaction with this technology, which is currently affecting multiple sectors and areas inside many organizations. This program is especially intended for: • Software developers • System engineers • Computer engineers • IT professionals • Project Managers • Department Directors/Coordinators • Entrepreneurs

Who is the target audience?

Artificial Intelligence is a technology that is quickly taking deep roots into businesses today, hence why investing in, and searching for specialized professionals in the area is on the rise. As a matter of fact, profile with technical knowledge on AI, and with the necessary organizational capacities to lead and implement projects are on high demand. This Master's degree has been designed to help the students become a leading figure in AI management in their organizations. They will also learn the main Machine Learning and Deep Learning algorithms, and understand the main applications, and implications of AI in a company. Moreover, for those with an entrepreneuring spirit, this program will help them to design innovative technology-based business models.

Job opportunities

AI is a cross-cutting discipline that affects all functional areas of a company, hence this program is aimed at any professional with interest in new technologies. It is especially focused on those who want to manage AI projects or lead this initiative at organizational level. Additionally, this program is very suitable for any department manager who wishes to update their technological skills which affect other areas within an organization.

List of subjects

MODULE 1. ARTIFICIAL INTELLIGENCE

UNIT 1. INTRODUCTION TO ARTIFICIAL INTELLIGENCE

1. State of the art of artificial intelligence
2. Philosophy of artificial intelligence
3. Future of artificial intelligence
4. Project development process with artificial intelligence
5. Data, your greatest asset

UNIT 2. TYPES OF ARTIFICIAL INTELLIGENCE

1. Machine learning
2. Deep learning
3. Transformers
4. Generation of synthetic data
5. Hyperparameters in artificial intelligence models

UNIT 3. INTRODUCTION TO MACHINE LEARNING ALGORITHMS

1. Linear regression
2. Non-linear regression and support vector machines (SVM)
3. Decision trees, random forests
4. Fuse logic and gradient down
5. Recommendation systems

UNIT 4. TURNKEY PROJECT

1. Preparation of the working environment: Anaconda, Visual Studio Code and Python
2. Input dataset and data preprocessing
3. TensorHub, TensorFlow and Keras
4. Image processing
5. Generation of artificial intelligence models

MODULE 2. SELF-SERVICE DATA PREPARATION. EXCEL, TALEND AND TRIFACTA

UNIT 1. DATA PREPARATION

1. Introduction
2. Self - Service solutions
3. Data processing techniques
4. Data quality management
5. Types of data problem

UNIT 2. EXCEL

1. Data cleaning with Excel
2. DATASET
3. Functions. Part I
4. Functions. Part II
5. Functions. Part III

UNIT 3. TALEND DATA PREPARATION

1. Instructions for installing talend data preparation free desktop
2. Data Cleansing with Talend Data Preparation
3. Basic cleansing functions
4. Data normalization
5. Data enrichment

UNIT 4. TRIFACTA WRANGLER

1. Registration instructions
2. Data cleansing with trifacta
3. Basic cleansing functions
4. Data normalization
5. Data enrichment

MODULE 3. DATA MINING, MACHINE LEARNING AND DEEP LEARNING (INGLÉS)

UNIT 1. SUPERVISED LEARNING (I)

1. Introduction
2. Simple, multiple and logistic linear regression (I)
3. Simple, multiple and logistic linear regression (II)
4. Support vector machines (SVM)
5. Decision trees

UNIT 2. SUPERVISED LEARNING (II)

1. KNN (k-nearest neighbors)
2. Naive Bayes
3. Evaluation of supervised models
4. Example exercise
5. Proposed exercise

UNIT 3. UNSUPERVISED LEARNING

1. Introduction to clustering: purconsider and metrics
2. K-means clustering
3. Hierarchical clustering, other techniques and examples
4. Principal component analysis (PCA)
5. PCA example exercise

UNIT 4. DEEP LEARNING

1. Artificial Neural Networks (ANN) (I)
2. Artificial Neural Networks (ANN) (II)
3. Artificial Neural Networks (ANN) (III)
4. Example exercise
5. Proposed exercise

MODULE 4. ADVANCED DEEP LEARNING

UNIT 1. SUPERVISED DEEP LEARNING (I)

1. Introduction
2. Review: Artificial neural network (ANN)
3. Review: ANN exercises
4. Convolutional Neural Networks (CNN)
5. CNN Exercises

UNIT 2. SUPERVISED DEEP LEARNING (II)

1. Natural language processing (I)
2. Recurrent neural networks (RNN) (I)
3. Recurrent neural networks (RNN) (II)
4. Natural language processing (II)
5. RNN Exercise

UNIT 3. UNSUPERVISED DEEP LEARNING (I)

1. Boltzmann Machines (BM)
2. Restricted Boltzmann Machines (RBM)
3. Recommender systems
4. Recommender systems: metrics
5. RBM exercise

UNIT 4. UNSUPERVISED DEEP LEARNING (II)

1. Self-organizing maps (SOM)
2. SOM exercises
3. Autoencoders (AE)
4. AE exercises
5. Proposed exercise

MODULE 5. POWER BI (ENGLISH)

UNIT 1. GETTING STARTED

1. Introduction to Power BI
2. Different types of Power BI
3. First simple report
4. Power Query: Data Sources
5. Data Transformation

UNIT 2. DATA MODELING AND DAX

1. Data Modeling
2. Starting with DAX (I)
3. Starting with DAX (II)
4. Getting proficient in DAX (I)
5. Getting proficient in DAX (II)

UNIT 3. DATA VISUALIZATION

1. Table and Matrix
2. Trends
3. How to properly filter your data
4. Bookmarks
5. Drill through

UNIT 4. TAKING IT TO THE NEXT LEVEL

1. Understanding Power BI Service in depth
2. Sharing content in Power BI Service
3. Comparing Power BI Service and Power BI Report Server
4. Integrating Python and R in Power BI Desktop
5. Introducing Bravo for Power BI Desktop

MODULE 6. MACHINE LEARNING, DEEP LEARNING AND DATA SCIENCE PRACTICAL APPLICATIONS

UNIT 1. MACHINE LEARNING

1. Linear regression
2. Logistic regression
3. Basic Neural Network
4. Clustering
5. Principal Component Analysis (PCA)

UNIT 2. DEEP LEARNING

1. Deep learning
2. Optimization
3. Convolutional Neural Network
4. Recurrent Neural Network
5. Natural Language Processing (NLP)

UNIT 3. DATA SCIENCE

1. Creating tables and Reports
2. Transformation and filtering data
3. Data visualization
4. Relation between data tables
5. Dashboard

UNIT 4. CASE STUDY APPLICATION

1. Object detection in images
2. Object classification in images
3. Facial recognition
4. Word detection
5. Business Intelligence application

MODULE 7. TECHNOLOGY ECOSYSTEMS

UNIT 1. INTRODUCTION TO TECHNOLOGY ECOSYSTEMS

1. The fourth industrial revolution
2. Digital transformation in companies
3. Fundaments and key points
4. Benefits
5. Enabling technologies

UNIT 2. ENABLING TECHNOLOGIES (I)

1. Big data
2. Cloud computing
3. Blockchain
4. Artificial intelligence
5. Augmented and virtual reality

UNIT 3. ENABLING TECHNOLOGIES (II)

1. BIM
2. Collaborative robots
3. Additive manufacturing
4. Hyperconnectivity
5. IoT

UNIT 4 ENABLING TECHNOLOGIES (III)

1. Manufacturing execution system (MES)
2. Process integration and efficiency
3. Use cases
4. New methodologies: agile, lean startup or design thinking
5. Business change management

MODULE 8. IDEATION METHODOLOGIES AND TECHNIQUES AND AI PROJECT MANAGEMENT

UNIT 1. INTRODUCTION

1. Introduction
2. Key elements in AI project management
3. AI project characteristics
4. Introduction to the main agile and ideation methodologies

5. Methodology integration

UNIT 2. DESIGN THINKING

1. Introduction
2. Phase I: Empathize
3. Phase II: Define
4. Phase III: Devise
5. Phase IV: Prototype

UNIT 3. LEAN START-UP AND SCRUM

1. Lean start-up. Basic concepts
2. Lean start-up. Tools
3. Scrum. Introduction
4. Scrum. Roles
5. Scrum. Ceremonies and artifacts

UNIT 4. APPLICATION TO AI PROJECTS

1. Introduction
2. Project ideation
3. Project implementation
4. Advise on implementing methodologies
5. Summary and conclusions

MODULE 9. THE IMPACT OF AI ON BUSINESS

UNIT 1. AI APPLIED TO DIFFERENT SECTORS

1. Financial sector
2. Retail sector
3. Industrial sector
4. Agricultural sector
5. Health sector

UNIT 2. AI APPLIED TO DIFFERENT BUSINESS AREAS

1. Logistics and operations
2. Marketing
3. Sales and customer service
4. Finance and control
5. People analytics

UNIT 3. AI AND ENTREPRENEURSHIP

1. Current scenario of a booming sector
2. Financing
3. Featured start-ups
4. Future of the AI ecosystem

5. Starting an AI company

UNIT 4. ETHICS. BUSINESS AND SOCIETY

1. Ethics. General remarks
2. Bias examples
3. Global initiatives
4. Public Institutions and regulations
5. AI in the SDGs

MODULE 10. MFP. MASTER'S DEGREE IN ARTIFICIAL INTELLIGENCE. MODEL MANAGEMENT AND IMPLEMENTATION

Did you find this information interesting?

If you still have questions, our academic advising team will be happy to answer them.

Ask us about our training method, our teachers, scholarships or even just get to know us.

Request information without commitment.

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