

# MSBA

## MASTER OF SCIENCE IN BUSINESS ANALYTICS

CTDA-DN-171-2024



College of Business

In academic collaboration with  
The University of Texas at Arlington

Apply now!



Transforms data into  
strategic decisions  
and empower your  
professional future



# QLU QUALITY LEADERSHIP UNIVERSITY

Quality Leadership University was founded in 1997 with the mission of educating highly skilled leaders and professionals who actively contribute to regional development. QLU's academic model is inspired by academic collaborations with prestigious universities in the United States, Chile and Spain. QLU currently offers programs in cooperation with the University of Texas at Arlington, University of Louisville, Illinois State University, Universidad de Chile and Universidad Ramón Llull La Salle, Barcelona. More than 2,000 students from Panama and the region study Bachelor's, Master's, Diploma and English Programs at QLU. Quality Leadership University is authorized to operate in Panama by Executive Decree, it is accredited by CONEAUPA and its programs approved by CTDA.



Since 2012, Quality Leadership University has been institutionally accredited by the National Council for University Evaluation and Accreditation of Panama (CONEAUPA). In 2022, QLU achieved institutional reaccreditation from CONEAUPA, certified by Resolution No. 17 of November 29, 2022 for the maximum period allowed, 6 years from Private Universities of Panama.



The University of Texas at Arlington College of Business is located in the heart of the most economically vibrant centers of the United States and provides students a world-class business education in a diverse learning environment that better prepares students for the business world they will enter post-graduation. Our commitment to excellence in academics, research, teaching and service to students, combined with a unique real-world approach to business education creates a dynamic learning environment that transforms student lives through knowledge.

## ACCREDITATION

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The University of Texas at Arlington's College of Business is fully accredited in business and accounting at both the undergraduate and graduate levels by the AACSB-International – The Association to Advance Collegiate Schools of Business.

## MS BUSINESS ANALYTICS RANKINGS

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# #9

in the U.S. for  
Public Universities

*Eduniversal (2024)*

# #32

in the U.S. for  
Public Universities

*QS World Report (2024)*

# #100

for Class & Faculty Diversity,  
Thought Leadership,  
and Value for Money

*QS World Report (2024)*

## ABOUT THE MSBA

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The Master of Science in Business Analytics program is designed to train professionals in the interpretation and analysis of large volumes of data to support strategic decision-making in business. The primary focus of the program is to equip students with advanced analytical tools, programming skills, and predictive modeling techniques to transform data into practical and actionable information that drives organizational success.

### Program Content and Its Importance for Professional Development

- The program consists of courses covering topics ranging from Python programming to artificial intelligence applied to business decision-making. Over the course of 45 credits, students develop skills in data analysis, data mining, evidence-based management, and economic forecasting. This comprehensive approach provides the necessary competencies to lead multidisciplinary teams, solve complex business problems, and create innovative data-driven solutions.

### Importance for Professional Development

- Graduates are equipped to hold key roles in various industries, including logistics, finance, and international trade, where data analysis is critical for optimizing operations and enhancing competitiveness.
- The training in Business Analytics enables professionals to not only manage large data sets but also apply this knowledge to business innovation, improving processes, and identifying new business opportunities.
- This multidisciplinary approach ensures that graduates of the program are well-prepared to face the challenges of today's market, both in the private and public sectors, contributing to sustainable development and the digital transformation of their organizations.

## PROGRAM INFORMATION

**18**

MONTHS

**45**

CREDITS

**11**

COURSES

## SCHEDULE

5 Weeks	Thursday and Fridays	6:00 p.m. – 8:00 p.m.	Synchronous Online Class Time from Arlington
1 Week	Monday-Friday	6:00 p.m. – 10:00 p.m.	In-Person in Panama

Each course will have an online synchronous component that will be offered from Arlington in a period of 5-6 weeks and classes in two sessions per week of two-hours per session.

## LANGUAGE



ENGLISH

## MODALITY



HYBRID

## PROGRAM BENEFITS



**Comprehensive Curriculum,** Covers key topics like Python programming, AI, data mining, and web/social media analytics.



**Industry-Relevant Skills,** Prepares students to lead data-driven decision-making across various sectors.



**Hands-On Learning,** Includes practical experience through real-world projects and simulations.



**Career Development,** Strong focus on leadership and team collaboration in analytics.



**Location Advantage,** Program offered completely in Panama in an executive format.

Networking, flexibility, internationalization, QLUEmprende, and other additional benefits.

## DIPLOMAS AND CERTIFICATIONS

### Graduate Certificate in Business Analytics

- The Graduate Certificate in Business Analytics is designed to enable students to acquire critical data science and analytics skills and apply these to solve traditional and new problems in their respective domains without having to enroll in a full Masters degree program.

Participants complete 15 graduate credit hours, which include four required courses and one elective.

#### Required Coursework

BSTAT 5325	Advanced Methods for Analytics
INSY 5336	Python Programming
INSY 5339	Principles of Business Data Mining
INSY 5377	Web and Social Analytics

#### One elective from the following list

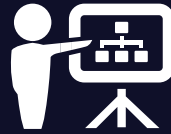
INSY 5337	Data Warehousing and Business Intelligence
INSY 5378	Data Science: A Programming Approach
ECON 5337	Business & Economic Forecasting

# GENERAL OBJECTIVES

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**Develop advanced analytical competencies**



**Foster leadership capacity in data analytics**



**Driving data-driven business innovation**

# SPECIFIC OBJECTIVES

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## **Proficiency in analytical tools**

Familiarize students with a wide range of analytical tools and platforms, including specialized data analysis software, programming languages, and data visualization techniques.

## **Application of advanced statistical methods**

Train students in the use of advanced statistical methods, such as multivariate analysis, time series, and predictive models, for the analysis of business data and the generation of actionable insights.

## **Development of communication skills**

Equip students with effective communication skills, both oral and written, to present data analysis results in a clear and persuasive manner to both technical and non-technical audiences within the business organization.

## **Emphasis on data ethics and privacy**

Promote understanding of the ethical and legal implications of data analysis, as well as best practices for ensuring information privacy and security in an increasingly digitized business environment.

## **Development of leadership and teamwork skills**

Encourage collaborative work in multidisciplinary teams, providing students with opportunities to lead data analysis projects from the identification of problems to the implementation of solutions, developing leadership skills and team management.



## STUDENT PROFILE

### Background

The ideal student has a bachelor's degree in a relevant field such as business, engineering, or information technology, with a strong interest in data-driven decision-making.

### Career Goals

Students typically aim for leadership roles in industries like finance, logistics, healthcare, and technology, focusing on data analysis and business strategy.



### Skills

Proficiency in problem solving, analytical thinking, and basic programming knowledge (Python is an advantage).

### Qualities

They are detail-oriented, proactive, and eager to apply data analytics for practical business solutions.

## COURSES

COD	COURSES
MSBA 533	Python Programing
MSBA 532	Advanced Methods for Analytics
MSBA 537	Data Warehousing
MSBA 534	Artificial Intelligence and Analytics for Managers
MSBA 538	Web and Social Analytics
MSBA 539	Data Mining
MSBA 540	Data Science
MSBA 543	Evidence-Based Management
MSBA 547	Measurement and Analysis for Business Decision Making
MSBA 548	Business and Economic Forecasting
MSBA 600	Business Analytics Capstone

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## **PYTHON PROGRAMMING**

An introductory programming course that teaches students how to solve business problems using the scripting language, Python. Students will be exposed to object-oriented programming concepts, file handling, database access, and graphical user interfaces.

## **ADVANCED METHODS FOR ANALYTICS**

Advanced statistical learning for business analytics designed to prepare graduate students to become competent producers and consumers of predictive analytics and statistical information and to use evidenced based managerial decision making in their careers. They should be able to recognize the strengths and weaknesses of applicable techniques and when additional expertise is required. Topics include multiple regression, correlation, logistic regression, discriminant analysis, clustering, and classification and regression trees. It is strongly recommended that students who have no recent courses in statistics take BSTAT 5301 prior to BSTAT 5325.

## **DATA WAREHOUSING AND BUSINESS INTELLIGENCE**

This course covers concepts, tools, and technologies associated with the design and implementation of data warehousing (DW) and business intelligence (BI) applications. Topics covered include data warehouse architecture and infrastructure, dimensional modeling, Extraction Transformation and Loading (ETL), On Line Analytical Processing (OLAP), data quality, and planning and implementation of a DW & BI application. The course objectives are met through a combination of lectures, class projects and homework assignments. Hands-on experience in developing and deploying a DW & BI application is provided.

## **PRINCIPLES OF BUSINESS DATA MINING**

This course will cover the foundations of business data mining. It will examine tools and techniques from the fields of machine learning and statistics used in practical data mining for finding, and describing, structural patterns in data. Topics may include: Knowledge representation and different types of data; Techniques for data pre-processing, cleaning, reduction, transformation, and visualization; Methods for Classification, Clustering, and Association Rules, including Decision Trees, Rules, Naive Bayes, k Nearest Neighbor, Neural Networks, Regression (linear & logistic), A-Priori, K-means, and hierarchical and density-based clustering; Performance evaluation of data mining algorithms using metrics. This course uses real world data sets and widely used statistical packages and programming languages.

## **AI AND ANALYTICS FOR MANAGERS**

Artificial Intelligence and Machine Learning (AI/ML) technologies offer new opportunities to analyze data, automate business processes, and transform business organizations. This course provides a broad overview of AI/ML technologies and their applications to solve business problems and support managerial decision making. Strategic and operational issues in deploying AI/ML technologies and creating a data-driven decision-making culture within the organization are discussed. A combination of classroom lectures and case analysis are used to provide a real-world perspective of operational and strategic issues related to development, deployment and management of AI/ML and data analytics technologies in business organizations.

## **DATA SCIENCE: A PROGRAMMING APPROACH**

The world is awash in data and companies are now trying to discern patterns and predict behaviors of both consumers and competitors to gain and sustain a competitive advantage. This course provides an in-depth understanding of data preprocessing/feature engineering as well as machine learning concepts and algorithms using Python. Students will receive hands-on training on supervised learning algorithms such as K-Nearest Neighbors (KNN), Naïve Bayes, Linear and Logistic Regression, Support Vector Machines, Decision Trees and Ensembles, and Artificial Neural Networks (ANNs). The course will also cover the foundations of Natural Language Processing (NLP), Social Network Analysis, and unsupervised learning algorithms such as K-Means, Hierarchical Clustering, t-SNE, and DBSCAN.

## WEB AND SOCIAL ANALYTICS

This course introduces the concepts, techniques, and tools of collecting and analyzing digital data on how users interface with an organization through the web and social media. The Internet and mobile technologies provide the vast sources of user data that describe or imply their behaviors, experiences, and attitudes. Analyzing these web (click) stream data and social media data serves the purposes of strengthening customer relationship management, improving online marketing (e.g. advertising, recommendation, pricing), and increasing the bottom line. The course will consist of lectures, case studies, hands-on exercises, and projects. Prerequisite: **BSTAT 5325** or equivalent.

## EVIDENCE-BASED MANAGEMENT

Evidence-based management is the process of translating principles and findings based on best evidence into organizational practice. This class covers the organizational and interpersonal sides of data and information. You will develop the skills and knowledge necessary to use data and analytics to inform management practice and make better decisions. Through case examples and classroom discussion you will learn skills in internal consulting, issue selling, data interpretation and presentation. While the focus is on the practical application of business intelligence, the skills learned in this course will allow all managers to make evidence-based decisions through data collection, analysis and presentation.

## MEASUREMENT AND ANALYSIS FOR BUSINESS DECISION-MAKING

This course provides students with a comprehensive overview of financial reporting, analysis and measurement issues in the context of business decision making. Student will gain an understanding of financial statements and their underlying measurements. They will then use this understanding to conduct analyses using financial ratios. Students will then explore the role of cost measurements, allocations, etc. in determining the performance measures of parts of the organization and their inter-relationship with both choosing and evaluating strategies in various business contexts. They will cover issues such as matching strategies to performance measures, choosing and evaluating key performance indicators and balanced scorecards, etc.

## BUSINESS & ECONOMIC FORECASTING

The course analyzes univariate and multivariate methods that allow users to capture patterns in data related to seasonality, trend and other random components to produce forecasts that are useful in virtually any business environment. Participants gain practical experience coding in relevant software. By the end of the course, students will be able to use statistical tools to critically assess the usefulness of alternative methods, which range from simple exponential smoothing to those that use machine learning.

## BUSINESS ANALYTICS CAPSTONE

This is a hands-on course that gives students an opportunity to apply their learning to real-world problems. Students will draw on their repertoire of analytical skills to work on one or more challenging projects. In-class discussions will include advanced topics in AI, Machine Learning, NLP, and other contemporary technologies. In addition to preparing a detailed report, students will present their findings to faculty and/or members of the business community. The course places considerable emphasis on problem-solving as well as on written and oral communication skills.

# INTERNATIONAL WEEK

## Immersive Experience for Business Analytics Students in Dallas-Fort Worth Metroplex

An international week for Panamanian students in the Master of Science in Business Analytics program would provide them with invaluable exposure to the thriving business environment of the Dallas-Fort Worth Metroplex.



## ACTIVITIES



### Corporate Visits

Tours and networking events with major corporations such as AT&T, Southwest Airlines, and financial institutions.



### Workshops & Seminars

Hands-on analytics sessions with industry experts on the latest in big data, machine learning, and predictive modeling.



### University Experience

Collaboration with UTA students on joint projects and networking opportunities with faculty.



### Cultural Immersion

Explore the local culture through visits to iconic landmarks like the Fort Worth Stockyards and Dallas Arts District.

## KEY OUTCOMES

This immersive week will enrich students' understanding of global business environments, enhance their professional networks, and allow them to apply analytics skills to real-world business challenges in a major U.S. hub.

**Eric Mwangi, ('20, MSBA)**  
Intern at GM Financial

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As someone who has been through another master's program, the MSBA program at UTA is different in that it doesn't just teach you how to crunch numbers but rather, it teaches you to be a problem-solver and through its internships and capstone projects, it gives you an opportunity to work with real clients to solve real-world problems.



**David R. Nutchey**  
Director, Commercial Data & Analytics, Alcon

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"The US Commercial Operations team of Alcon Vision LLC has worked with UTA and their MSBA program on two distinctive Capstone courses. The solutions created by the students addressed the identified business problem and served as a platform for the Alcon team to continue to build on these solutions and further refine / customize the solutions for our businesses. The UTA program is preparing their students to be strong contributors to any organization that they join."

**Brian White, VP Region North America**  
Support and Repair, Ericsson

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Ericsson has partnered with the University of Texas at Arlington College of Business to help reskill our highly skilled employees. The skills gained have led to new ways of utilizing data in our business that has already delivered payback well into the future. Our graduates are enthusiastically driving our transformation and many are planning to pursue the complete master's program with UTA. UTA is a gem hidden within the metroplex.



# APPLICATION REQUIREMENTS

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- ✓ Achieved a 3.0 grade point average (GPA) (on a 4.0 scale), or equivalent, or better in all upper-level coursework in their undergraduate studies.
- ✓ Applicants whose native language is not English must demonstrate proficiency in the English language by presenting a minimum score of 79 on the Internet Based Test (iBT) Test of English as a Foreign Language (TOEFL) (equivalent to 500 on the paper-based version), or 6.5 overall on the International English Language Testing System (IELTS), or 100 on the Duolingo.
- ✓ Submit two (2) letters of recommendation from persons in a position to judge the applicant's potential for success in graduate study.
- ✓ Present a one (1) page personal statement indicating the reason and motivation for pursuing the Program.
- ✓ Submit official transcripts of all previously attended universities (undergraduate and graduate) in a sealed university envelope.
- ✓ Submit official proof of any degrees obtained; a notarized copy of the original diploma is required.
- ✓ Documents in a language other than English must be translated by an official translation agency, as notarized translations will not be accepted.
- ✓ Submit current Curriculum Vitae in English describing professional and academic background.

Application Form







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## INVESTMENT

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- ✓ Investment: \$25,000 + \$1,000 registration fee.
- ✓ QLU offers a payment plan of 24 months 0% interest.
- ✓ Financing opportunities: IFARHU, BAC, Banistmo.

 [maestrias@qlu.pa](mailto:maestrias@qlu.pa)  264-0777  +507 6030-8533  [qlu.pa](http://qlu.pa)



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