Business Informatics MSc

Analytical Business Intelligence Specialization in English

Besides excelling at engineering and natural sciences, and providing degrees in engineering recognized world-wide, BME also has a renowned school of economics. Our industry partners confirm that there is an increasing call for students in Business Informatics with specialization in Analytical Business Intelligence. Our specialization is open to attract some of the best students from all over the world, training them to become the highly skilled experts, who support the regional operations of the multinational companies.

In today's globalized world, students will have more and more opportunities to spend time abroad working, studying or both. Completing the program in English would certainly increase the career opportunities of the students.

The MSc degree in Business Informatics with **specialization in Analytical Business Intelligence** (MSc in ABI) is a professional degree designed to give students a thorough understanding of the field: the tools and methods of advanced analytics used in business life. It focuses on practice and theory with the goal to provide knowledge that is directly useful in industry positions.

It is an integrated, interdisciplinary curriculum consisting of courses developed exclusively for business and industrial applications such as data mining, forecasting, optimization, text and media analytics, databases, data visualization, data privacy and security, and customer analytics. Students gain hands-on experience with the complex tools in actual industry use today.

The subjects of Business Informatics with specialization in Analytical Business Intelligence are related to a discipline combining information technology (IT) and informatics as well as business and management concepts. Graduates will be applicable for positions like information manager, systems analyst, systems designer, project manager, business solutions developer, information system (IS) specialist or consultant in areas like enterprise resource planning, supply chain management, customer relationship management, or knowledge management.

During the specialization the courses will also cover the following topics:

- Different types of business analytics: risk analysis, customer analytics and financial analytics.
- Business strategies for the future: forecast, foresight.
- Analytic methods for marketing: recommendation systems and social media analysis.

There are four dedicated courses of the specialization:

- **CUSTOMER ANALYTICS**

The course deals with the theoretical aspects and high-level practical knowledge of customer analytics for building customer focused solutions based on customer profitability and relationship management. Students will have a foundation in data mining principles for customer analytics problems; understand an end-to-end customer analytics solution development process from both a business and analytics perspective.

- **RISK ANALYSIS AND MANAGEMENT**

The course is concerned with the identification, assessment and analysis of different forms of enterprise risk (assessing practical risks and losses). It also focuses on the techniques and strategies of handling, avoiding or mitigating risks.

- **BUSINESS AND FINANCIAL ANALYSIS METHODS**

The focus of this course is the finance of investment. Specific topics include security pricing, risk and return, portfolio theory and derivatives. At the end of the course students will have the skills to tackle real world analytics problems businesses in the investment and credit market frequently face.

- **MEDIA AND TEXT MINING**

The course is concerned with introducing the students to the identification, assessment and analysis of intelligent information search and multimedia retrieval systems. It also focuses on content handling techniques, where content may be text, media, or both.

TOPICS OF THE PROJECT WORKS INCLUDE (BUT ARE NOT LIMITED TO):

- Sentiment analysis and text mining
- Dashboards and other visualization based reporting
- Forecasts in the book market
- Data mining
- Knowledge management
- Optimization of industrial problems
- Data analytics and financial market models implemented in Python

RELATED PHD PROGRAMME

MSc studies can be continued as part of our PhD program, where students may research different topics, e.g., data mining of time series, portfolio optimization, text mining or credit scoring.

INDUSTRIAL COOPERATIONS

The topic of the specialization is trending, therefore several companies cooperate with the BME, offering the students the possibility to understand the real life challenges of the financial markets.

FURTHER INFORMATION ON THIS SPECIALIZATION:

The coordinator of the specialization is Csaba Simon, Associate Professor at the Department of Telecommunications and Artificial Intelligence (TMIT). For further information you may contact him (simon@tmit.bme.hu), or visit the Open Days of the Specialization.

Open days @Dep. of Telecommunications and Artificial Intelligence
17:00, 9th of April, 2025., I. Bldg., room IB.210
Webpage: https://www.tmit.bme.hu/gain-msc-gazdelemzo