MŰEGYETEM 1782

BME-TMIT

DEPARTMENT OF TELE-COMMUNICATIONS AND MEDIA INFORMATICS

Analytical Business Intelligence Specialisation

BUSINESS INFORMATION SYSTEMS MSC

DEPT. OF TELECOMMUNICATIONS AND MEDIA INFORMATICS

WHY BUSINESS INFORMATICS?

STUDY IN ENGLISH

SCOPE OF STUDIES

SPECIALISATION COURSES

PROJECT LABORATORY / DIPLOMA WORK

RELATED PHD PROGRAMME

INDUSTRIAL PARTNERS

BME-TMIT

Why study business informatics?

Besides excelling at engineering and natural sciences, and providing degrees in engineering recognised world-wide, BME also has a renowned school of economics. Our industry partners confirm that there is an increasing call for experts with an **MSc degree in Business Information Systems with specialisation in Analytical Business Intelligence**. Multinational companies are striving to establish European education centres which meet their need for highly skilled human resources to support their regional operations.

Study in English

We intend to build a high quality, internationally recognised MSc program in order to attract some of the best students from all over the world. In today's globalized world, students will have more and more opportunities to spend time abroad either working, studying or both. Completing the program in English would certainly increase the career opportunities of the students.

Scope of studies

The MSc degree in Business Information Systems with specialisation 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 customer is always right.
Now you can be too!

Specialisation Coordinator:

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Scientific Advisor , BME-TMIT

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Specialisation courses

The subjects of Business Information Systems with specialisation 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. There are five subjects in the specialisation:

Business and Financial Analytics

Focus: investment finance. 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.

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 and implementation process from both a business and analytics perspective.

Make businesses more successful using analytics and business information systems

Trend Analysis and Visualization

The course deals with principles and applications of ARIMA models for time series, mapping thematic models for forecasting issues and their applications, foresight analysis, understanding the role of visualisation and its advantages in data representation.

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.

BME Building of Informatics

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.

Project laboratory / Diploma work

Topics of the works include (but are not limited to):

- **Different types of business analytics**: risk analysis, customer analytics, financial analytics.
- **Business strategies for the future**: forecast, foresight.
- **Solutions**: market basket analysis, social network, enterprise content categorization.
- **Analytic methods for marketing**: recommendation systems, social media analysis.

Sample student assignments:

- Sentiment analysis and text mining;
- dashboards and other visualisation based reporting;
- forecasts in the book market;
- churn minimalisation in large companies;
- data mining;
- knowledge management;
- optimisation of industrial problems.

„It's a great time to be in marketing… if you embrace analytics"
(Tom Davenport, Babson College)

Related PhD programme

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

Industrial partners

The companies are striving to establish education centres which meet their need for highly skilled human resources. For example, **SAS Institute** (Statistical Analysis System) company is the major supplier of new generation business intelligence products worldwide. It has a US based education centre in North Carolina State University, where an Institute for Advanced Analytics has been established. Due to cooperation between SAS and BME a similar agreement has been signed between the two institutions making BME a regional education centre. Another request for the English program comes from **Morgan Stanley** which has R&D centres for analytics and IT in Budapest with international staff.

Head of Dept:
Gábor Magyar, PhD
associate professor

Dept. of Telecommunications and Media Informatics

CONVERGENT TELECOMMUNICATION, INFORMATION AND MEDIA TECHNOLOGIES

From a scientific approach to the real-world applications

Education

Electrical Engineering BSc

Infocommunication Networks and Applications (br), Infocommunication (foundational technical course).

Computer Engineering BSc

Infocommunication Networks and Services (branch),
Media Informatics (branch),
Enterprise Management Systems (specialisation).

Common core courses: Telecommunication Networks and Services, Databases, Databases Lab, Management of Information Systems, Speech Information Systems.

MSc Program

Infocommunication Systems (EE specialisation),
Networks and Services (CE specialisation),
Media Informatics (CE specialisation),
Analytical Business Intelligence (Business Inf Syst spec)
Engineering Management (common core course).

PhD Program

Postgraduate PhD studies at the Electrical Engineering and the Computer Sciences Doctoral Schools of BME.
Participation in the **EIT Digital Master School** and **Doctoral School**

Education and Test Laboratories

Telecommunication test network; optical networks, network (router, switch) and end-devices (Windows, Unix/Linux); Small Office Home Office; wireless networks (WiFi); sensor networks, multimedia networks and services (IPTV, VoIP, TriplePlay); databases and data mining tools (Oracle, SAS).

Research

Telecommunications / Infocommunications

High Speed Networks Laboratory (HSN Lab)
IP-based systems and applications, infocommunication services (IPTV, P2P); Future Internet; OpenFlow, SDN, Next Generation Networks, IMS, Metro Ethernet; Fixed-Mobile Convergence (optical, LTE); security; traffic modeling; protocol technology and testing; network monitoring and management; ambient networks (RFID, sensor, ad hoc).

Engineering Management Laboratory (EM Lab)
Engineering development, market and sector strategies; engineering management methods; market regulation of infocommunication networks and services, resource management, regulatory mechanisms, decision procedures, social and economical aspects of the Internet.

Media Informatics

Multimedia and Content Management Laboratory
Databases technology, media databases, archives; information discovery and retrieval, data and text mining, content management systems, media security, multimedia information systems and applications.

Speech Communication and Intelligent Interactions Laboratory
Multilingual information systems, multimodal interaction, mobile user interfaces, speech databases, processing, synthesis and recognition; dialogue-based information systems

Cognitive Infocommunications Laboratory
Cognitive information modelling and applications, intelligent and soft computing systems, fuzzy systems.

Contacts, cooperation, research frameworks

Participation in **EU projects** (IST and ICT 6th and 7th Framework Programmes, COST, EU ACTS,). Cooperation with **foreign universities** (NCSU, NTNU, UPMC, TU Berlin), **research institutes** (Fraunhofer Gesellschaft, NICT/Japan), **international professional associations** (ITU, ETSI). Participation in **knowledge centres** (ETIK - Inter-University Cooperative Research Centre, MIK – Mobile Innovation Center). Cooperation, contracts with **manufacturers**, **telecommunication service providers**, **content providers**, **governmental bodies** (Ericsson, Magyar Telekom, Telenor, Oracle, SAS, BAY-IKTI, Magyar Posta, Avaya, GVH, NMHH, NHIT, Morphologic). **Tenders** at national research financing bodies (NFÜ, OTKA, GVOP, ITEM).

Specialisation Open Day at our Department: ***May 3, 2017 (Wednesday), from 2:45 pm, BME Building of Informatics, Room I.B.210***