Tárgy neve: Business Intelligence

Tárgyfelelős neve: Molnár Bálint

Tárgyfelelős tudományos fokozata: PhD, egyetemi docens

Tárgyfelelős MAB szerinti akkreditációs státusza: AT

Az oktatás célja angolul:

a) **knowledge**
- In order to be able to perform their work in an innovative way and do research (when necessary) in their own IT specialization, they have comprehensive and up-to-date knowledge of general mathematical and computing principles, rules and relationships, particularly – depending on their chosen specialization – in the following areas: algebraic, linear algebraic and number theory methods and applications, special fields of mathematical analysis, numerical methods and their applications; discrete mathematics, graph theory, logic and their applications; theoretical basics and applications of stochastic modelling and statistics; first-order and second-order statistical analysis, operation research; algorithmic methods in mathematics, formal models and tools in computing science, complexity and efficiency theory of algorithms, and special algorithms of application fields.
- They are familiar with the principles of business, organizational and corporate procedure, information, data, software and technical-technological architectures as well as with the methods of describing and designing these architectures.
- They have a high level of fluency in the language of IT – including its professional vocabulary and its characteristic features of expression and composition – both in their mother tongue and in English, at least.

b) **skills and abilities**
- They are able to formalize complex IT tasks, to identify and study their theoretical and practical background and then to solve them.
- They are able to perform design, development, operation, and management tasks when operating complex software systems, database management systems, corporate information systems, decision support systems, and expert systems
- They are able to comprehensively understand, plan, organize, manage and control processes related to their IT specialization at management level.
- They are able to initiate collaboration and work in a team as well as on projects with IT or other professionals.
- They are able to analyze and apply new problem-solving methods and procedures related to their IT specialization.
- They are able to apply their IT skills in a diverse, multidisciplinary professional environment.
- They are familiar with IT professional vocabulary, which enables them to express themselves at a high level, both orally and in writing, in their mother tongue and (at least) in English; i.e. they are able to participate in discussions and debates, to write reports, to work with, understand and utilize scientific and technical literature (e.g. professional books, chapters, articles etc.).
- They are able to professionally use scientific and technical information sources to obtain knowledge necessary for solving a problem, and to critically interpret and evaluate it.
- Under professional guidance, they are able to carry out scientific research on their own, and to prepare for further studies at postgraduate level.

c) **attitude**
- They follow professional and technological developments in their IT field.
- They are committed to critical feedback and evaluation based on self-examination.

- They are committed to lifelong learning and they are open to acquiring new IT competencies.
- They accept and make their co-workers apply the ethical principles of work and organizational culture as well as those of IT scientific research.
- They share their knowledge and consider it important to disseminate professional IT results.
- They consider it important to propagate and realize environmentally conscious behavior and social responsibility, and they promote them with the help of information technology.
- They are committed to having quality requirements met and to analyzing them with IT tools.
- They are open to proactive collaboration with IT and other professionals.

d) autonomy and responsibility
- They take responsibility for their professional decisions made in their IT-related activities.
- They undertake to meet deadlines and to have deadlines met.
- They bear responsibility for their own work as well as for the work of their colleagues they work together with in a project.
- Regarding mission critical IT systems, they can be entrusted with developing and operational responsibilities that are in accordance with their professional competencies.

Az oktatás tartalma angolul:
The course deals with business intelligence that provides a decision support for business activities on empirical data. The term business is understood in a rather broad sense covering activities in different domain of applications, e.g. enterprise, university, public administration, health, finance and banking. Business intelligence summarizes a huge set of models and analytical methods such as reporting data warehousing, data mining, process mining, predictive analytics, organizational mining, and text mining.
1. Business Intelligence
   1.1. Introduction – Definition of Business Intelligence.
   1.2. Modelling Business Intelligence
   1.3. Data Provisioning
   1.4. Data Description and visualization
   1.5. Data Mining for Cross-Sectional Data
   1.6. Data Mining for Temporal Data
   1.7. Process Analysis
   1.8. Analysis of Multiple Business Perspectives

A számonkérés és értékelés rendszere angolul:
continuous assessment, practical course mark and examination;
assessment of the presentation and summary of the dedicated chapter, paper

Idegen nyelven történő indítás esetén az adott idegen nyelvű irodalom:
Text book, compulsory:
- Grossmann, Wilfried, and Stefanie Rinderle-Ma. Fundamentals of Business intelligence. Springer, 2015.

Proposed further reading:
- Tufféry, Stéphane. Data mining and statistics for decision making. John Wiley & Sons, 2011.
- McDonald, Kevin, Andreas Wilmsmeier, David C. Dixon, and W. H. Inmon. Mastering the SAP business information warehouse. John Wiley & Sons, 2002.