

# University of Óbuda Károly Keleti Economic Faculty

GSXAB2ABNE		<b>Databases</b>							
<b>Institute:</b>	Szervezési és Vezetési Intézet 1081 Budapest, Népszínház u. 8.						<b>Credit:</b>	5	
<b>division:</b>	Full-time			<b>language:</b>	English		<b>Semester:</b>	2018/19/2	
<b>technical:</b>	Technical Management BSc								
<b>Course owner:</b>	András László Keszthelyi PhD			<b>Teacher:</b>	András László Keszthelyi PhD				
<b>Prerequisites:</b>									
<b>Weekly / semester hours:</b>	Weekly / semester	<b>Course:</b>	2	<b>Classroom Practice:</b>	0	<b>Lab:</b>	2	<b>Consultation:</b>	0
<b>Requirement:</b>	final grade/exam								
<b>Condition of Signature:</b>									
<b>Grading:</b>									
<b>Educational purpose:</b>	Students will learn the conceptual basics and the realization of database management systems, the process of data modelling and database planning, modern data management methods. They will also learn the basics of SQL language and some operational aspects using a relational database management tool (most probably MySQL).								
<b>Mid-term requirements (task, thesis, essay, etc.):</b>	Test 1 (mid-semester) 10%, Test 2 (end-of-semester) 20%, Group project (Case study) 20%, Individual project (Case study) 50%								
<b>Week of Education (Consultation)</b>	<b>Topic (Lecture)</b>								
1.	Models and data modelling in general. The relational way of database management. Data, information, process of getting m								
2.	Example data model								
3.	Tools and methods of data modelling, identification								
4.	Conceptual, logical and physical levels of database planning								
5.	Relationships and their attributes, realization is SQL								
6.	Typical modelling errors/mistakes, their reasons								
7.	Redundancy and normalization, semantic normalization								
8.	Special structural factors, elements and problems								
9.	Critical elements in database planning								
10.	Missing values, problems related to NULL mark								
11.	Problems, questions and rules of operating a database								
12.	Basics of data protection and data security								
13.	Summary								
14.	Test								
<b>Week of Education (Consultation)</b>	<b>Topic (Lab)</b>								
1.	Data modelling example I.								
2.	Data modelling example II.								
3.	DQL: structure of SQL commands, select								
4.	DQL: multiple table queries and group functions								
5.	DQL: sub-queries								
6.	Different exercises								
7.	DML: insert, update, delete								
8.	DDL: create, alter, drop								
9.	DDL: triggers								
10.	DTL: transactions								
11.	Different exercises								
12.	DCL: grant, revoke								
13.	Operational aspects, export, import, backup								
14.	Consultation								

Compulsory literature	
1	Given parts from: Garcia-Molina, Ulmann, Widom (2008). Database Systems: The Complete Book, Pearson/Prentice Hall, 2009. <a href="https://people.inf.elte.hu/miiqaai/elektroModulatorDva.pdf">https://people.inf.elte.hu/miiqaai/elektroModulatorDva.pdf</a>
2	Given parts from: MySQL Online Documentation <a href="https://dev.mysql.com/doc/refman/5.7/en/">https://dev.mysql.com/doc/refman/5.7/en/</a>
3	
4	
Recommended literature	
1	Garcia-Molina, Ulmann, Widom (2008). Database Systems: The Complete Book, Pearson/Prentice Hall, 2009. <a href="https://people.inf.elte.hu/miiqaai/elektroModulatorDva.pdf">https://people.inf.elte.hu/miiqaai/elektroModulatorDva.pdf</a>
2	
3	
4	
<b>The quality assurance methods</b>	TÜV CERT EN ISO 9001:2000
Developed competences	
	<b>a) knowledge</b>
	Knowledge of general and specific natural and technical scientific, business and management scientific principles, rules, relations, and procedures as required to pursue activities in the special technical field
	Knowledge of the production implements of the closer special technical field, as well as the conditions and rules of their operation.
	Knowledge of the basic facts, relations, limits, and limitations of the knowledge and activity system of the special technical field..
	Knowledge and understanding of the organizational and operational procedures of technical processes in the special field.
	Knowledge of the real, human, and socio-economic interrelations of production and service processes, and their impact on health and safety.
	Knowledge of the basics, requirements, and relations of the special fields of business and management science (management, production management, quality management, project management, innovation management,
	Knowledge of the main procedures and methods of the design, economic viability analysis, and technical implementation of investments and development projects.
	Knowledge of the methodology for performing environmental impact assessments and for compiling impact studies, as well as the basics of legal regulation.
	Knowledge of the learning, knowledge acquisition, and data collection methods of the special fields of technical management, their ethical limitations and problem solving techniques.
	Knowledge of technologies of the closer special technical field.
	<b>b) capabilities</b>
	Able to apply the general and specific natural and technical scientific, business and management scientific principles, rules, relations, and procedures acquired for solving routine tasks in the special technical field.
	Able to manage, organize, and supervise technical, technological, investment, manufacturing, logistics, quality assurance, and IT processes, as well as to coordinate their development.
	Able to produce business plans, to complete tasks for decision preparation, and to develop and implement innovation strategies.
	Able to lead workplace teams, to manage human resources.
	Able to manage information.
	Able to analyze products and market opportunities, as well as to sell products and services with a technical content.
	Able to take part in and coordinate the work of teams involved in process and operations development.
	Capable to cooperate and establish contacts; endowed with communication skills.
	Sense of responsibility, sense of quality, capabilities of evaluation, self-evaluation, analysis and synthesis.
	Able to assess and manage investment needs as well as to perform technical and profitability surveys related to investments.
	Able to operate and apply softwares supporting their special field as a user level.
	Able to communicate and present in a professionally adequate manner, verbally and in writing, in the mother tongue and in one foreign language.
	Able to process and utilize domestic and international references.
	<b>c) attitude</b>

	Compliance with the legal, ethical, and professional regulation systems of work and employment.
	Efforts to make decisions by taking legal regulations and ethical norms fully into consideration.
	Efforts to make decisions by being aware of the opinions of the colleagues supervised, possibly in cooperation therewith.
	Efforts to foster professional development by on-going self-education and development training.
	Comprehensive system approach.
	<b>d) autonomy and responsibility</b>
	Ability to manage independently the technical, economic, and human resources processes of production and service companies.
	Independent selection and use of relevant problem solving systems in completing analysis tasks pertaining to their special field.
	Realistic evaluation of own work results.
	Taking responsibility for professional decisions.
	Taking responsibility for the work processes controlled and performed by them.