UNIVERSITY OF PANNONIA

COURSE DATASHEET

Semester:	2016/17/2
Course:	Theory of Database Systems
Code:	VEMISA3312A
Responsible department:	Department of Computer Science and Systems Technology
Department code:	MISA
Responsible instructor:	dr. Ágnes Fogarassyné Vathy

Course objectives:

The goal of this subject is to introduce the theory of database management systems, familiarize students with the steps and methodology of the database design process.

Course content:

1. ANSI-Sparc model. Data abstraction and independence. Data modelling, overview of data models. Database users.
2. Terminology, function and components of database management systems.
3. Relational data structures.
4. Normalization: redundancy, anomalies. Functional dependencies, normal forms.
5. Entity-relationship model. Enhanced Entity-relationship model. Problems of Entity-relationship model.
6. Lifecycle of database design. Mapping EER Model to Relational Model.
7. Relational algebra. Query optimization.
8. Theory of distributed databases.
9. noSQL systems

Requirements, evaluation and grading:

Required and recommended readings:

1. R. Elmasri - S.B. Navathe: Fundamentals of Database Systems. Addison Wesley, 2007.
2. Avi Silberschatz, Henry F. Korth, S. Sudarshan: Database System Concepts,McGraw-Hill, 2005
3. Thomas M. Connolly, Carolyn E. Begg: Database Systems: A Practical Approach to Design, Implementation, and Management, Pearson Education, 2005
4. J. D. Ullman: Principles of Database and Knowledge-Base Systems I., Computer Science Press, 1989.
5. Ullman & Widom: Adatbázisrendszerek – Alapvetés, Panem Kiadó, 2008