UNIVERSITY OF PANNONIA

SUBJECT DATASHEET

Semester: 2010/11/1

Subject: Environmental Database Analysis

Code: VEMLKVM453K

Responsible department: Department of Environmental Engineering

Responsible department code: MKKV

Responsible lecturer: dr. Endre Domokos

Educational objectives:

The aim of the course is that the students know the up-to-date decision-supporting systems, their using and limitations.
The students able to choose adequate software and use it expertly.

Detailed content of the subject:

1. Statisticaly basis of handling of great number of data.
2. Dataquality classes (data precision, data reliability, rightness's of classification)
3. Preparation of data for evaluation (filtering, normalizing, u-probe, ? 2-probe, t-probe).
4. Special processing of environmental measurements data
5. Computer based data storage methods.
6. Data-visualization techniques, measurement errors visualization, curve and trend-line fitting
7. Method of handling and comparing of great number of data
8. Techniques of chart making for decision making
9. Avoid of distorted data visualization and recognition of these charts
10. Computer aided filtering of manipulated measurement data
11. How we use data mining in environmental protection?
12. The aim of laboratory practice is that the students know up-to-date data-processing and analyzing software and their usage. They make graphical, statistical and text analysis of a big measure database.

Requirements:

Article on graphical, statistical and text analysis of a big measure database.

Required and suggested references:

Ketskeméty László, Izsó Lajos: Bevezetés az SPSS programrendszerbe, Eötvös Kiadó, 2005, ISBN: 9-63463-823-6
Bolla Marianna, Krámli András: Statisztikai következtetések elmélete, Typotex Elektronikus Kiadó, 2005
Ian H. Witten, Alistair Moffat, Timothy C. Bell: Managing Gigabytes, Morgan Kaufmann Publishing, San Francisco, ISBN 1-55860-570-3.

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Required and suggested references:

Michael R. Berthold: Intelligent Data Analysis, Springer, 2003, ISBN 3-54043-060-1
David J. Hand, Heikki Mannila, Padhraic Smyth: Principles of Data Mining (Adaptive Computation and Machine Learning), The MIT Press, 2001, ISBN 0-26208-290-X