

I001	obligatory – Semester 5	Fundamentals of Databases	L+P+S 1+1+1	ECTS 4
------	----------------------------	----------------------------------	----------------	-----------

Course objectives. Students learn about different data models, principles of database modelling, and acquire skills required to use databases. In exercises they should gain an insight into fundamental concepts of relational database management systems by using Microsoft Access and basic database administration.

Course prerequisites. Introduction to Computer Science.

Syllabus.

1. Data management in information society. Basic concepts: data, database, information, knowledge. Data processing systems. Formatted and unformatted data records. Transaction and analytic databases. Information systems.
2. Introduction to MS Access.
3. Creating and modifying of tables.
4. Data manipulation. Simple *select* query. Relations between tables.
5. Use of the MS Access Wizard in creating forms and reports.
6. Macros in MS Access.

Expected learning outcomes.

After completing the course, students are expected to:

- demonstrate the knowledge and intelligence as the basis for the original work and development of ideas;
- apply their knowledge, understanding and ability to problem solving in a wider context in the area of databases according to the profession;
- be able to communicate information, ideas, problems and solutions to both experts and non-experts;
- possess the learning ability for continuing the study programme on a higher level.

Teaching methods and student assessment. Lectures will be illustrated by examples in MS Access and by simultaneously relating theoretical and practical parts of classes. Exercises are partially auditory and partially organized as computer laboratory exercises. The final examination is taken upon the completion of lectures and exercises and it includes demonstration of the work by MS Access tools. Students can pass the final examination or significantly affect the final grade by taking part in the project in cooperation with the teacher.

Can the course be taught in English: Yes.

Basic literature:

1. M. MacDonald, Access 2007 (2010): The Missing Manual, O'Reilly Media, 2007 (2010).

Recommended literature:

7. T. Hennig, R. Cooper, G. L. Griffith, J. Dennison, Access 2010 Programmer's Reference (Wrox Programmer to Programmer), Wiley Publishing, 2010.
8. L. Aune, J. Cox, N. Dudle, Brzi tečaj za Microsoft Access, Algoritam, 1999.
9. C.J. Date: An Introduction to Database Systems, 8th Edition. Addison-Wesley, Reading MA, 2003.
10. R. Elmasri, S. Navathe: Fundamentals of Database Systems, 6th Edition. Addison-Wesley, Reading MA, 2010.
11. R. Manger, Baze podataka, 2nd edition, 2011 (available online).