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| 1. Course title: State-of-the-art Database Systems | | | | | |
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| 2. Code: | | 3. Type (lecture, practice etc.): lecture, practice | | | |
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| 4. Contact hours: 1 lect + 2 pract | | 5. Number of credits (ECTS): 3 | | | |
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| 6. Preliminary conditions (max. 3): | | | | | |
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| 7. Announced:fall semester, spring semester, both | | | | | |
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| 8. Limit for participants: 40 | | | | | |
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| 10. Responsible teacher (faculty, institute and department):  Gábor Pauler PhD (Faculty of Science, Institute of Mathematics and Informatics) | | | | | |
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| 11. Teacher(s) and percentage: | | Dr. Gabor Pauler | | 100 % | |
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| 12. Language:Hungarian | | | | | |
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| **13. Course objectives and/or learning outcomes**:  Aim of the course to introduce students in the theory and practice of data warehouse design of web-based or brick-and-mortar supermarkets:  **Knowledge:** BPD, DFD, ERD, GUI planning diagrams, graphic SQL designers, simple OLAP tools, MS Visio, ERWin ERD designers  **Skills:** Students successfully completing the course will be able to design or modify commercial data warehouses, and provide data from there for top managerial decision supporting  **Motivation:** With these skills, students can fill the gap between managers and software developers, translating requests and offers between them  **Autonomy:** Teams of students can select their project application freely, based on the advices of the tutor. | | | | | |
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| 14. Course outline in weeks   |  |  |  | | --- | --- | --- | | **Week** | **Lecture** | **Practice** | | 0 | Introduction, 10 requirements of data handling | - | | 1 | Organizational preconditions, BPD, DFD, Excel | MS Visio BPD | | 2 | Excel, OOP, Relational DB., 1st normal format | MS Access Intro/Import, table analyzer | | 3 | 2nd and 3rd normal formats | MS Visio ERD, Planning task: Hospital, Pregnacy | | 4 | 4th and 5th normal formats, denormalization | Planning task: used car dealer, road network | | 5 | Star scheme: General dimensions | Dimensions of supermarket system, Planning task: Gas utility | | 6 | Properties of modern RDBMs | MS SQL, Oracle GUI | | 7 | DDL | UDT, Rule | | 8 | Single table SQL queries | Single table SQL queries | | 9 | Multi table SQL queries | Multi table SQL queries | | 10 | DB GUI planning | MS Access Forms | | 11 | MS Transact SQL, Stored Proc | Stored Proc | | 12 | Oracle PL/SQL, Cursor, Trigger | Cursors, Triggers | | 13 | OLAP | Excel Pivot Tables | | | | | | |
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| 15. Mid-semester works  3. Group presentation: BPD: 10%  6. Group presentation: ERD: 15%  9. Group presentation: GUI prototype: 10%  12. Group presentation: View table queries: 15% | | | | | |
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| 16. Course requirements and grading  50%: From team project presentations.  50%: Oral exam  Aggregated grading (no separate limits on exam and team project) 0-49%:Fail(1), 50-69%:Suffice(2), 70-79%:Medium(3), 80-89%:Fair(4), 90-100%:Excellent(5) | | | | | |
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| 17. List of readings   1. PTE-TTK Database 2 electronic course material (in Hungarian) <ftp://szentagothai.ttk.pte.hu/pub/pauler/Database2/> 2. Stackowiak R.: Oracle Data Warehousing and Business Intelligence Solutions (Wiley, 2007) ISBN: 0-471-32521-5 | | | | | |
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| 18. Recommended texts, further readings   1. Claudia Imhoff - Nicholas Galemmo -Jonathan G. Geiger: Mastering Data Warehouse Design Relational and Dimensional Techniques (Wiley, 2003) 458 p.ISBN: 0-471-32421-3 2. Ralph Kimball - Margy Ross: The Data Warehouse Toolkit (Wiley, 2002) 447 p ISBN 0-471-20024-7 | | | | | |
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| **Date** | 28 April, 2017 | **Prepared by** |  | | |
| Dr. Gábor Pauler  responsible teacher | | |
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| **Endorsed by** | | |  | | |
| Dr. habil Mátyás Koniorczyk  program supervisor | | |