# Foundations of Data and Knowledge Systems

VU 181.212, WS 2010

1. General Information

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## Outline







## Classes

- Place. All classes will be held in the Seminarraum 183/2 (Favoritenstraße 9-11, fourth floor).
- Time. All classes are Tuesdays, 09:00 (sharp) – 11:00 starting on 9 November, 2010.
  For the students' presentations (18 + 25 January), additional time (until 12:00) might be needed – depending on the number of participants.
- Target group. This course is primarily designed for students of the Vienna PhD School of Informatics; further graduate students with a strong background in mathematical logic and complexity theory are also welcome.





## Communication

- (during, after) classes
- email
  - registration in TISS required
  - check your mail address in TISS

## Course overview

- Focus: Foundations of Rule-based Query Answering
- Syntax of First-Order Predicate Logic
- Some Fragments of First-Order Predicate Logic
- Fundamentals of Classical Model Theory
- Declarative Semantics of Rule Languages
- Operational Semantics of Rule Languages
- Complexity and Expressive Power





## Assessment

### Components

1. Individual work on 1 research article
   - Details (e.g. assignment of articles) to be provided later
   - Oral presentation ca. 20-25 min (depending on number of students)
2. Oral exam at the end of the semester





## Assessment of the Presentation

### Criteria of a good presentation

- reasonable effort (ca. 40 hours)
- basic understanding of the article
- honestly identify parts which you did not understand
  (give a justification: which prerequisites were missing?)
- relate the article to the taught part of the course
- quickly check important background articles
- being able to answer questions
  (in particular, those relating the article to the course)





## Literature

### Basic reading

This course is mainly based on the following article:
François Bry, Norbert Eisinger, Thomas Eiter, Tim Furche, Georg Gottlob, Clemens Ley, Benedikt Linse, Reinhard Pichler, Fang Wei: Foundations of Rule-Based Query Answering. Reasoning Web 2007, Lecture Notes in Computer Science 4636: pp. 1 – 153, Springer (2007).

### Further articles

- Further references will be provided as we go along.
- Access to the proceedings of the most important conferences and journals in the field is free of charge inside the TUWIEN domain.

## Access to Articles

- ACM digital library: `http://portal.acm.org/dl.cfm`
  e.g., SIGMOD proceedings, ACM TODS, etc.
- IEEE Xplore Digital Library:
  `http://www.ieee.org/web/publications/xplore/`
  e.g., ICDE proceedings
- via University library: `http://www.ub.tuwien.ac.at/`
  e.g., select "E-Journals" and search for desired journal
- Some proceedings are free to everybody,
  e.g.: IJCAI proceedings: `http://www.ijcai.org/`
  or VLDB proceedings: `http://www.vldb.org/`





## Comfortable Search & Access via DBLP

- DBLP "Computer Science Bibliography"
- contains information on (almost) all relevant publications
- Overview: `http://www.informatik.uni-trier.de/~ley/db`
- Google-search, e.g., "DBLP <author>" or "DBLP <conference>"
- access to the article: click on text-icon
- free access from TUWIEN-domain as described above
  (e.g., ACM digital library, Springer Verlag, etc.)





## Alternative Search Methods

- Citeseer, e.g., Google-search: "citeseer <title of article>"
- `http://scholar.google.com` (keyword search)
- Authors' Homepages