

2025/26 Homework assignment 2: Data modelling

Send the required deliverables to `Jana.Kosticova@fmph.uniba.sk` with the subject **PTS2 HW2**.

The deadline is **19.11.2025 23:59:59**.

Create data models representing how Comenius University organizes and delivers courses. Use the domain concepts in the attached glossary. The glossary should be self-contained with respect to the domain modeling, but in case you really need some extra concepts, feel free add them.

Deliverables

1. Domain model

- UML class diagram that depicts
 - Domain concepts as **classes**. Add 3-5 key attributes for each (at least) of the core entities: Course, Student, Teacher, Room.
 - Enumerations (as separate **classes** or **enumeration** data types with listed values).
 - Their mutual relationships as **associations**.
- For each association
- Write correct cardinalities on both ends
 - Write association name and express reading direction using "solid triangle" notation.

2. Logical data mode

- UML class diagram derived from conceptual model
 - Turn all domain concepts and enumerations to tables
 - Add primary and foreign keys
 - Add abstract data types
 - Add join table for many-to-many relationships (and use standard naming)
 - Modify associations to capture referential integrity (they must be oriented now).

3. Physical data model

- Write Create table statements for tables representing these concepts: Scheduled Course, Academic Year and Course
- Use local PostgreSQL database or <https://sqlfiddle.com/postgresql/online-compiler>
- Use NULL / NOT NULL option explicitly for each attribute. For foreign keys, follow the domain model; for other attributes make your own decision based on your domain knowledge.

Other conditions:

- During the following lecture (12.11.) there will be time to your questions about domain.
- Draw both diagrams in a diagramming tool (e.g., <https://app.diagrams.net/>) and submit them in **PDF format**. Submit DDL statements as **".sql" file**. Follow examples from the lecture. It is not required to handle business rules and integrity checks beyond referential integrity.
- This is each student's own and independent work. Collaboration between students and the generation of content by AI tools are not allowed. Violation of this rule may result in zero points for this homework assignment and referral of the case to the disciplinary committee of FMFI UK.