

**CIS 8040**

**Topics**

**(Not guaranteed to be all-inclusive)**

ER-Relational Model

* Translation (transformation) of ER to Relational Model
  + Every entity becomes a separate relation
  + For relationships there are two options:
    - Foreign key: for 1:N relationships
    - Separate relation: with the key of the relation the concatenation of the two keys of the corresponding entities. Relationship attributes become non-key attributes.
* Make sure you understand the rules and can apply them to a given conceptual model. Also the inverse.

SQL

* Understand what a query language is
  + Why are query languages important for data management?
    - Helps us build and retrieve useful information from the database
  + SQL – Structured Query Language, nonprocedural language, what to retrieve, not how to do so. Used for data administration, data manipulation and to query a database
* SQL – DDL (data definition language) and DML (data manipulation language)
  + Understand the Create Statement and its usefulness (create the tables)
  + Appreciate how to populate a database. Ensure referential integrity in the data.
  + Understand the need for correctness of each piece of data for retrieval and use purposes.
* SQL – DML for Basic SQL queries
  + Be able to write and interpret single-table, multiple-table SQL queries
  + Basic form of command: Select – From – Where
  + Know how to create tables and insert data
  + Understand the requirements for specifying a data type for each attribute
  + See examples in lecture notes and text