

## COMP 4740 – Advanced Databases

**Calendar Description:** Parallel, distributed, object-oriented, object-relational, and XML databases; other emerging database technologies.

**Prerequisite:** COMP 3380.

### Outline

- 1) Review: Database concepts and usage (1 week)
- 2) Object-oriented and object-relational databases (1½ weeks)
- 3) Management of semi-structured data and XML data (2 weeks)
- 4) Distributed databases (1½ weeks)
- 5) Parallel databases (1½ weeks)
- 6) Temporal and spatial databases (2 weeks)
- 7) Multimedia databases (2 weeks)
- 8) Deductive databases (1½ weeks)
- 9) Other topics (if time permits):
  - Real-life applications of advanced database technologies; data management in geographic information systems (GIS); genome data management; information retrieval (IR) and Web search

**Text:** Elmasri & Navathe, *Fundamentals of Database Systems*, Addison-Wesley, 2011

**Optional References:** Garcia-Molina et al., *Database Systems: The Complete Book*, Prentice Hall, 2009

Ramakrishnan & Gehrke, *Database Management Systems*, McGraw-Hill, 2003

Silberschatz et al., *Database System Concepts*, McGraw-Hill, 2011