CSCI 6950 - Advanced Database Design and Administration

Fall 2026 Syllabus, Section 01, CRN 40909,

Credit hours: 3

Instructor

Angello Astorga

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Public Instructor Information

Instructor Title: Part-Time Faculty
Instructor Professional Qualifications:

Ph. D., Computer Science, University of Illinois Urbana-Champaign, 2024
Bachelor's, Computer Science and Engineering, The Ohio State University, 2015

Instructor Office Location: Meshel Hall 324
Instructor Office Phone: 330-941-3289

Course Description

6950. Advanced Database Design and Administration. Advanced concepts in database design, development, and administration. Database query languages, transactions, and data warehousing. Relational calculus. System analysis; concurrency; backup and recovery, and security issues; advanced models, including distributed, object-oriented, and online databases. Prereq.: graduate standing. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Database Design, Application Development & Administration	Michael Mannino	9781948426954

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Tentative Course Schedule

Week of	Reading(s)	Proposed Topic	Due/To Prepare for Class
8/24	Chapter 1	Introduction to DB & Management	
8/31	Chapter 2	Introduction to DB Development	Set up SQL Oracle APEX
9/7	Chapter 3	The Relational Data Model (SQL Standard)	
9/14	Chapter 4	Query Formulation SQL	Quiz Ch. 1 - 4
9/21	Chapter 4	Practice (Tentative)	Assmt Ch. 4 - Basic Queries
9/28	Chapter 5 Chapter 6	Entity Relationship Diagrams Data Models for Business Databases	Assmt Chapter 5 Creating ERD and Writing queries with this ERD. Quiz Ch. 5 and 6

10/5	Chapter 7	Normalization Concepts	Assmt Ch. 7 Normalization Quiz Ch. 7 SQL Reviews Graduate Assmt: ERD's Normalization, and SQL
10/12		Midterm	Midterm
10/19	Chapter 8	Physical Database Design	
10/26	Chapter 9	Advance Matching Problems	Assmt Advance SQL problems Quiz Ch. 9
11/2	Chapter 9	cont. Ch. 9	
11/9	Chapter 10	Views, Nulls, and Hierarchical Queries	Assmt Views and Nested Queries
11/16	Chapter 11 Chapter 12	Stored Procedures and Triggers Data Warehouse Concepts and management	Assmt Basic PLSQL Quiz Ch. 11 and 12
11/23	Chapter 16	Database Administration	Graduate Assmt: Advanced SQL, PLSQL, Database Admin
11/30	Chapter 17	Transaction Management	
12/7	Scheduled by University (See additional information)		Final Exam

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.