

## U701-328: Introduction to Databases

**Course Format:** Online

**Course Author:** Xue (Nancy) Ning, PhD

**Course credits:** 3

**Prerequisites:** No specific prerequisites. However, basic calculation, logical thinking, and quantitative reasoning are necessary skills required throughout this course.

**Course Level:** Introductory; Appropriate for first-year or higher college students and high school students.

**Course Description:** A database is a fundamental component of an information system. Database Management Systems (DBMSs) support the development and use of databases by facilitating data insertion, update, retrieval and integrity. IT professionals must know how to design a sound database. In addition, they must know how to retrieve and update data through a DBMS. This course explores the following topics: relational model, relational algebra, SQL, four main objects and relationships, database normalization, database applications, and data-driven decision making. In this course, students will receive hands-on experience with at least one DBMS (MS Access and MySQL) and work on database projects with real-world business scenarios by applying the concepts. In addition, this course will introduce database industry careers and trends with practical information and knowledge. Students will be well-prepared to start a career in the database industry.

### Required Course Materials

Textbook (two options – choose whichever works best for you)

- **Hardcopy:** Friedrichsen, Ruffolo, Monk, Starks, Pratt, Last, Concepts of Database Management, 10th Edition (ISBN: 978-0357422083)
- **eText (from Cengage):** Friedrichsen, Ruffolo, Monk, Starks, Pratt, Last, Concepts of Database Management, 10th Edition (ISBN: 978-0357706176)

**Technology Requirements:** You will need a reliable computer, Internet connection, webcam, speakers, and a microphone for this course.

## Course Learning Objectives

After completing this course, students will:

- develop a comprehensive knowledge of DBMS by learning the concepts taught in this course.
- acquire business problem-solving skills by applying the concepts in hands-on practices.
- acquire an up-to-date understanding of database industry careers and trends.

## Course Overview

LESSON	TOPICS	EVALUATED ACTIVITIES
1	Introduction to Database Management	Quiz 1
2	The Relational Model – Introduction, QBE, and Relational Algebra	Homework 1 Quiz 2
3	Review and Project with MS Access	Assignment 1
4	The Relational Model - SQL	Homework 2 Quiz 3
5	Review and Project with MySQL	Assignment 2
6	The Relational Model – Advanced Topics	Homework 3 Quiz 4
7	Review and Mid-Course Exam	Mid-Course Exam
8	Database Design – Normalization	Homework 4 Quiz 5
9	Database Design – Relationships	Homework 5 Quiz 6
10	Database Project-Part 1	Assignment 3
11	DBMS Processes and Services	Homework 6 Quiz 7
12	Database Industry Careers	Homework 7 Quiz 8
13	Database Industry Trends	Homework 8 Quiz 9
14	Database Project-Part 2	Assignment 4
15	Review and Final Exam	Final Exam

**Evaluation Methods**

The final grade of this course will be based on your performance in assignments, lab work, quizzes, the Mid-Course Exam, and the Final Exam. Your lowest quiz score will be dropped for final grading. Grades will be weighted as followed:

Type of Evaluation	Percentage of Grade
Assignments (1&2)	8%
Assignments (3&4)	16%
Homework (8)	24%
Quizzes (9)	27%
Mid-Course Exam	10%
Final Exam	15%
TOTAL	100%

**Exam Method:** Online without proctoring.

This course requires all students to complete exams online. Students receive one attempt on each exam.

**Grading Scale**

The following grading scale is used to evaluate all course requirements and determine your final grade:

A = 93–100	B = 83–87.9	C = 70–77.9	D = 60–69.9
AB = 88–92.9	BC = 78–82.9		F = Below 60

*Pass/Fail Option*

Students who enroll in an Independent Learning (IL) course under the pass/fail option will receive a final grade of S in place of a final grade equivalent to an A, AB, B, BC, or C and a final grade of U in place of a final grade equivalent to a D or F.