

# UNI CS 3140 (Fall 2022)

## Database Systems, Section 01

### Course Syllabus

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### Course Information

#### Course Name and Number

CS 3140 Database Systems

#### Meeting Times

Lecture: MWF 1:00pm–1:50pm in Wright 009

#### Contact Information

(Lead Professor): Dr. Sarah Diesburg – [sarah.diesburg@uni.edu](mailto:sarah.diesburg@uni.edu)

Office: EBAR 39

Office hours: Zoom only. Schedule here: <https://tinyurl.com/s3b6fpe7>

Class website: Available through UNI eLearning: <https://elearning.uni.edu>

#### Credit Hours

3 Credit Hours

This course meets the Course Credit Hour Expectation outlined in the Course Catalog. **Students should expect to work approximately 2 hours per week outside of class for every course credit hour.**

#### Course Materials (Required)

Follow these directions to obtain access to your mandatory online textbook:

- Sign in or create an account at <http://learn.zybooks.com>
- Enter zyBook code: UNICS3140DiesburgFall2022
- Subscribe

### Course Description

Storage of, and access to, physical databases; data models, query languages, transaction processing, and recovery techniques; object-oriented and distributed database systems; and database design. Prerequisite(s): [CS 1520](#); [CS 1800](#); junior standing. Prerequisite(s) for Data Science minors: [CS 2150](#); junior standing. (Fall)

### Course Learning Outcomes

- Understand the role of a database management system in an organization.
- Understand basic database concepts, including the structure and operation of the relational data model.
- Understand and apply basic database design principles, including ER diagrams.
- Construct database queries using Structured Query Language (SQL).
- Compare and contrast data storage models.
- Understand the role of transactional management in database systems.
- Design, implement, and program the interface to a database containing real-world data.

# Performance Evaluation

## Grade Determination

The final grade you earn in this course will be based on the points accumulated over five activities as described below.

Note: The final is optional and, if taken, will replace the lowest exam grade. Note that the final will replace the lowest exam grade, regardless if it is higher or lower than that grade.

Activity	Percent
Lab Work	10%
Zybook Participation Activities	10%
Zybook Challenge Activities	5%
Final Hands-on Project	15%
Regular Exams (4 regular exams @ 15% each)	60%
Final Exam (replaces lowest regular exam)	optional
<b>Total</b>	<b>100%</b>

*For this class to count towards the computer science and network and system administration majors, you must earn at least a C-.*

## Grading Scale

100 – 92	A	77.9 – 72	C
91.9 – 90	A-	71.9 – 70	C-
89.9 – 88	B+	69.9 – 68	D+
87.9 – 82	B	67.9 – 62	D
81.9 – 80	B-	61.9 – 60	D-
79.9 – 78	C+	59.9 – 0	F

## Class Attendance and Participation

If you miss a class due to illness, quarantine, or any other reason, it is your responsibility to find out what was covered by watching the recording of the lecture (Panopto link found on elearning). If you must miss a class with an in-class lab, you must finish the lab on your own.

## In-Class Lab Work

At different points in the class, we will pause from regular lectures to implement a learned concept during an in-class lab. These in-class labs are meant to give you experience outside of your textbook environment with a real database. In-class labs are typically meant to be finished within the regular class period, but if they are not completed in class, they must be completed by 11:59pm on the day they are assigned.

## Zybook Participation and Challenge Activities

Zybook participation activities can be found within the textbook chapter section. These questions are meant to gauge if you are reading and understanding the material and should be completed before the class in which they are discussed.

Zybook challenge activities are more challenging than participation activities and can also be found with the textbook chapter section. These activities are a bit more like traditional homework. It is expected that you attempt these activities as you read the section and bring your questions to class.

***Both weekly zybook participation and challenge activities for the weekly assigned readings are due each Friday at 11:59pm.*** Again, it is a great idea for you to read these assigned sections before the class in which they are discussed so that you can engage more fully with the lecture and have an opportunity to ask questions on any challenge activity for which you are stuck.

Participation and challenge activities are to be completed individually.

## Exams

There is a total of four in-class regular exams this semester.

- Each regular exam must be taken during the scheduled time and will cover content from the knowledge unit.
- The final exam is cumulative and is optional. If you elect to take the final, it will replace the lowest regular exam grade, regardless if the final grade is higher or lower than the lowest regular exam grade.

**By default** these exams are closed-book/closed-notes exams. The dates of these exams are listed on the class schedule. You are expected to be present for these exams unless you have made prior arrangements. Make-up exams will be offered under very limited circumstances. If you are aware of conflicts prior to the exam, please bring these to my attention as early as possible.

## Final Hands-on Project

The hands-on group project will involve the design, implementation, and front-end programming of a small database containing real-world data. This project will be introduced shortly before Thanksgiving break. In the final two regular weeks of class after Thanksgiving break, you will be given class time to work on the project.

## Incompletes

Incompletes are awarded only in very rare instances when an unforeseeable event causes a student who has completed all the coursework to date to be unable to complete a small portion of the work in the last week or two of the semester (typically the final project or exam). Incompletes will not be awarded for foreseeable events including a heavy course load or a poorer-than-expected performance. Verifiable documentation must be provided for the incomplete to be granted.

## Tentative Schedule (Subject to Change)

Date	Topics/Notes
8/22 – 9/9	Introduction to Databases and Relational Databases
9/12	Exam #1
9/14 – 9/30	Structured Query Language (SQL)
10/3	Exam #2
10/5 – 10/19	Database Design
10/21	Exam #3
10/24 – 11/4	Data Storage and Transaction Management
11/7	Exam #4
11/9 – 12/9	Database Programming and Project
12/13 (Tuesday)	Optional Final (1-2:50pm)

## Computing Environment

The following labs have pre-configured software for this class:

- **Wright 110 & 112** – This is where you will meet for your lab sessions. This is a public lab part of the

week but it also used by other classes at other times of the day/week and may not always be available. It generally closes at 5pm on weekdays.

- **Wright 339** – This lab is open the latest on weekdays (until 9:00pm or so).
- **EBAR 10** – This is a small general purpose lounge available to students in the CS department. This is a good place to get a quick printout or check your email between classes. It generally closes at 5pm on weekdays (or when the last faculty member leaves).