

**Information and Database Systems I**  
CIS 4301 Section 1304  
**Class Periods:** M W F 10:40AM to 11:30AM  
**Location:** Weimer Hall 1064  
**Academic Term:** Fall 2022

***Instructor:***

Prof. Daisy Zhe Wang

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Office Phone Number: (352) 294-6677

Office Hours: CSE E456 M/F 9:30-10:30am

***Teaching Assistant/Peer Mentor/Supervised Teaching Student:***

Please contact through email/slack/canvas

- Haodi Ma, [ma.haodi@ufl.edu](mailto:ma.haodi@ufl.edu), CSE E312 Tuesday 2-4pm
- Yifan Wang, [wangyifan@ufl.edu](mailto:wangyifan@ufl.edu), on Zoom (Link TBA) Wednesday 2-4pm (Lab related QA)
- Jayetri Bardhan, [jayetri.bardhan@ufl.edu](mailto:jayetri.bardhan@ufl.edu), TBA

***Course Description***

**CIS 4301 Information and Database Systems 1 - 3 Credits**

**Grading Scheme:** Letter Grade

First part of a two-course sequence that studies the essential concepts, principles and techniques of modern database systems. Topics include modeling and querying of data using conceptual data models as well as the development of a database application.

***Course Pre-Requisites / Co-Requisites***

(COP 3504 or COP 3503) and COT3100

Programming Fundamentals and Application of Discrete Structures

***Course Objectives***

This course is the first in a two-course sequence that serves as an introduction to modern database systems. This first course provides an in-depth view of databases from a sophisticated user's perspective. Essentially, when you are done with this class you will know the right way to design and implement software that uses a database as a back end to store and manage data. Even if you think that you know the right way to do this because you have played with MySQL previously, the simple fact is that you probably do not know the right way. We will not cover database internals or how to tweak them to get them to run fast; that is the topic of the next course in the sequence.

Even though we are only looking at database technology from a user's perspective, there are still a lot of topics to cover:

- Conceptual Database design and modeling (The ER model, ER Diagram)
- The Relational Data Model
- Relational Query Languages (relational algebra, relational calculus, and SQL)
- Logical Database Design (functional dependencies and normal forms)
- Advanced Topics (Data Mining, Big Data, Data Science, Knowledge Graphs)

## **Materials and Supply Fees**

### Required Textbook:

The textbook required for this class is A First course in Database Systems, Third Edition, by Jeffrey Ullman and Jennifer Widom (Prentice Hall, ISBN 0-13-600637-X). Alternatively, you can also buy Database Systems: The Complete Book, Second Edition, by Hector Garcia-Molina, Jeffrey Ullman and Jennifer Widom (Prentice Hall, ISBN 0-13-187325-3). The required textbook A First Course is the first 11 chapters of The Complete book. I'd also recommend that you purchase a book specifically on Oracle programming. An example is Oracle 10g Programming: A Primer, by R. Sunderraman. You can survive without purchasing such a book (especially if you are comfortable Googling for information rather than looking it up in a book).

### **Relation to Program Outcomes (ABET):**

<b>Outcome</b>	<b>Coverage*</b>
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	High
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	Low
3. An ability to communicate effectively with a range of audiences	Low
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	Medium
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	High
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	High

### **Required Textbooks and Software**

- A First course in Database Systems
  - Author: Jeffrey Ullman and Jennifer Widom
  - Publication date and edition: September 2009, Third Edition
  - ISBN number: ISBN 0-13-600637-X
- Database Systems: The Complete Book
  - Author: Hector Garcia-Molina, Jeffrey Ullman and Jennifer Widom
  - Publication date and edition: 2008, Second edition
  - ISBN 0-13-187325-3

## ***Course Schedule***

The following is given as a draft and subject to change.

Week 1:	Overview
Week 2:	E/R Diagram/Lab setup
Week 3:	E/R Diagram & Relation Data Model/Assignment 1
Week 4:	Relation Data Model & review
Week 5:	Relational Algebra/Exam 1
Week 6:	Relational Algebra & SQL/Lab 1
Week 7:	SQL/Assignment 2
Week 8:	SQL & review/Exam 2
Week 9:	Triggers/Lab Quiz 1/Lab2
Week 10:	Transactions, Views, and Indexes/Pair up
Week 11:	Functional Dependencies/Assignment 3
Week 12:	Review/ Exam 3
Week 13:	Functional Dependencies & Data Warehousing and Data Mining/Lab 3
Week 14:	Data Warehousing and Data Mining/Assignment 4
Week 15:	Data Warehousing and Data Mining & Research/Advanced Topics & review
Week 16:	Exam 4/Lab Quiz 2

## ***Attendance Policy, Class Expectations, and Make-Up Policy***

### ***Attendance Policy***

This class is not early morning and not early afternoon so make the effort and show up every class! There will be in class exams, reviews and lab quizzes. Although, class attendance is not required in the sense that I will not take role and will not make attendance an explicit part of the class grade, attending class is the single most important thing that you can do to earn a good grade in 4301. The material that will appear on our quizzes and assignments comes exclusively from class lectures. The textbook is there only to reinforce material covered in class. Furthermore, I will cover material that is not in the textbook. Thus, if you do not attend class you are at a serious disadvantage.

### ***Make-Up Policy***

I am extremely sympathetic if you have some conflict that will make it difficult for you to attend a quiz or get an assignment completed on time. However, I don't like people to take advantage of my sympathy. So, I have a very strict and explicit set of rules governing missed quizzes and late assignments. To be fair to everyone in the class, these rules are always followed to the letter and without exception.

1. If you have some conflict and feel like you may need an extra day on the assignment or need to take the quiz a day or two later, it must be cleared with me no fewer than one week (seven days) before the assignment is due or the quiz will be held. I am generally sympathetic to the standard excuses, if you sound credible ("I have three exams that day", "My brother's bar mitzvah is the day before the assignment is due", are the usual type of excuses that I hear). However, if you do not clear it a week in advance, you will receive a zero, with only two exceptions, given below.
2. If you are ill at the time of a quiz or right before an assignment is due and so you miss the one week window, or if there is a death in your immediate family, I will allow a late assignment or a make-up provided (a) you can give me proof of the circumstances, and (b) you let me know before the quiz is held or the assignment is due.
3. If you simply don't turn in the assignment or don't show up for the quiz, the only valid excuse is a note from a doctor given as proof that you were injured or ill at the due date to such an extent that it would be unreasonable for you to send me an email or leave a message letting me know of your illness or injury. In any other case, the result is a zero on the assignment.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Click here to read the university attendance policies:  
<https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

### ***Evaluation of Grades***

<b>Assignment</b>	<b>Total Points</b>	<b>Percentage of Final Grade</b>
Exam #1	100	15%
Exam #2	100	20%
Exam #3	100	15%
Exam #4	100	20%
Lab Quiz #1	100	15%
Lab Quiz #2	100	15%

### ***Grading Policy***

The following is given as an example and subject to change.

<b>Percent</b>	<b>Grade</b>	<b>Grade Points</b>
90.0 - 100	A	4.00
87.5 - 89.9	A-	3.67
85.0 - 87.4	B+	3.33
80.0 - 84.9	B	3.00
77.5 - 79.9	B-	2.67
75.0 - 77.4	C+	2.33
70.0 - 74.9	C	2.00
67.5 - 69.9	C-	1.67
65.0 - 67.4	D+	1.33
60.0 - 64.9	D	1.00
0 - 59.9	E	0.00

More information on UF grading policy may be found at:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

### ***Students Requiring Accommodations***

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### ***Course Evaluation***

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

### ***In-Class Recording***

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil

proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

### ***University Honesty Policy***

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### ***Commitment to a Safe and Inclusive Learning Environment***

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Jennifer Nappo, Director of Human Resources, 352-392-0904, [jpennacc@ufl.edu](mailto:jpennacc@ufl.edu)
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, [taylor@eng.ufl.edu](mailto:taylor@eng.ufl.edu)
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, [nishida@eng.ufl.edu](mailto:nishida@eng.ufl.edu)

### ***Software Use***

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

### ***Student Privacy***

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://registrar.ufl.edu/ferpa.html>

## **Campus Resources:**

### Health and Wellness

#### **U Matter, We Care:**

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

**Counseling and Wellness Center:** <https://counseling.ufl.edu>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

#### **Sexual Discrimination, Harassment, Assault, or Violence**

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, [title-ix@ufl.edu](mailto:title-ix@ufl.edu)

#### **Sexual Assault Recovery Services (SARS)**

Student Health Care Center, 392-1161.

**University Police Department** at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

### Academic Resources

**E-learning technical support**, 352-392-4357 (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu).  
<https://lss.at.ufl.edu/help.shtml>.

**Career Connections Center**, Reitz Union, 392-1601. Career assistance and counseling; <https://career.ufl.edu>.

**Library Support**, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

**Teaching Center**, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.  
<https://teachingcenter.ufl.edu/>.

**Writing Studio, 302 Tigert Hall**, 846-1138. Help brainstorming, formatting, and writing papers.  
<https://writing.ufl.edu/writing-studio/>.

**Student Complaints Campus:** <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>; <https://care.dso.ufl.edu>.

**On-Line Students Complaints:** <https://distance.ufl.edu/state-authorization-status/#student-complaint>.