
Instructor: **Prof. Tanu Malik**

Course: **CSC 453: Principles of Database Management Systems**

Spring 2022

1 Overview

This first course in database systems introduces the principles of database management. These principles include: set-based database design using the relational model, declarative querying of data with structured query language, concepts of functional dependencies and normalization algorithms, transactions, and programming databases in conjunction with other programming languages.

1.1 Course Objectives

Learn the principles of data management in the context of a relational database management system. Learn how to:

1. Store data using the relational model.
2. Query and retrieve data from an RDBMS using SQL.
3. Store graph data and query using recursive SQL.
4. Make RDBMSes interact with other programming languages using PL/SQL and JDBC.
5. Use functional dependencies to design database schemas in normal forms.
6. Apply transaction levels to modify and update databases.

2 Instructor Information

Instructor: Prof. Tanu Malik

Loop Office: 836, CDM Building, 243 S. Wabash Ave

Email: tanu.malik@depaul.edu

Phone: (312) 362-1121

Instructor Home Page: <http://facsrv.cs.depaul.edu/~tmalik1/>

Instructor Lab Page: <https://dice.cs.depaul.edu>

Course Home Page: <http://d2l.depaul.edu> (for lectures slides, assignments, reading schedules, examples, learning outcomes)

LMS Homepage: <http://d2l.depaul.edu> (for grades and video recordings)

3 Prerequisites

If you are not sure that you have satisfied the prerequisites, speak to the instructor before the second lecture. Prerequisite Courses:

- Data Structures in Java II (CSC403 or CSC301)
- Programming skill. You must have programmed with either Java, Python, or C before this course. Such skills are typically acquired by taking courses like Systems I and II.

4 TextBook

- **Required textbook:** Database Systems: The Complete Book. By Molina, Widom, Ullman. ISBN-13: 978-0131873254 / ISBN-13: 978-0131737181
- **Optional:** Oracle SQL, ISBN13: 9781565926974
- **Alternate:** Fundamentals of Database Systems (seventh edition), by Ramez Elmasri and Shamkant B. Navathe, ISBN 0133970779 or 978-00133970777.

5 Software

Oracle SQLDeveloper <https://www.oracle.com/tools/downloads/sqldev-downloads.html>

All CDM machines have SQLDeveloper installed.

6 Assessment

- Homework Assignments: 30%,
- Worksheets: 10%
- 2 Exams (Midterm and Final): 60% .

The grade boundaries used for the class are as follows:

Letter Grade	Percentage >=
A	90
A-	88
B+	84
B	81
B-	77
C+	73
C	69
C-	65
D	60
F	Below 60

7 Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L.

8 Student Expectations

8.1 Course-related Expectations

1. No attendance is taken in the class. Students are expected to watch the online recording within 48 hours of it being posted.
2. Students are expected to read posts on D2L in a timely fashion.
3. Students are expected to read the book and reflect upon it.

4. Lecture slides are a supplement to lectures only. The slides are not intended to be read in lieu of listening to the lecture.
5. The course requires that students actively engage the material on your own. Students should not only read the notes and example programs in class, but also do self-tests, modify code and queries, and run it. As always, figure out what you can definitely code, code it, try it, and then consider extending the boundaries.
6. Students are strongly encouraged to ask questions in the Discussion forum and offer comments relevant to the day's topic.

8.2 Communication Expectations

1. The subject of your email must begin with CSC453. If not, there is no guarantee of response. I generally try to respond within 48 hours.
2. You may address me as Professor, Prof. Malik, Dr. Malik, or simply Tanu.
3. All electronic interactions are an extension of the classroom and should be treated as such. While disagreement can be part of the discourse, online communication should remain respectful and appropriate rather than demeaning and/or unprofessional.

8.3 Homework/Worksheet Expectations

1. Worksheets completion is self-reported, but may be audited by asking for a demonstration of the completed source code/ work.
2. Homework assignments will be distributed and submitted via D2L. Emailed submissions will not be accepted.
3. Grades and comments will be returned through D2L.
4. No late submissions.
5. Submitted work must be worked on individually. You must not use or look at anyone else's solution, and you must clearly acknowledge any code that you obtain from other sources (such as books, magazines, or the Internet). If you are in any doubt, contact the instructor well before the submission date for advice. You may use as much code as you like (without acknowledgement) from the examples discussed in class. Plagiarism will result in penalties up to and including failing the course.

8.4 Exams

1. You must take a note of the midterm exam and final exam dates as posted on the schedule on the course homepage.
2. You must attend the midterm and final exams via a proctor. Unproctored exams will not be expected. No make-up exams will be given.
3. In case of medical emergency, a medical note, cc'ed to the Dean of Students and your Graduate Advisor, will be required for an absence. Business trips or vacations are not valid reasons for missing the exam. Please register for the exam as soon as possible.

8.5 Schedules and Dropping the class

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incomplete can be found at: <http://cdm.depaul.edu/enrollment>. Drop dates are available from: <https://academics.depaul.edu/calendar/Pages/default.aspx>

9 University Policies

9.1 Health and Safety Precautions

This class will follow COVID-19 Health and Safety Precautions as provide by DePaul University. The recommendations may change as local, state, and federal guidelines evolve. Students who do not abide by the mask requirement may be subject to the student conduct process and will be referred to the Dean of Students Office. Students who have a medical reason for not complying with any requirements should register with DePaul's Center for Student with Disabilities (CSD).

9.2 Respect for Diversity and Inclusion

At DePaul University our values are aligned with Vincentian Values At DePaul, our mission calls us to explore "what must be done" in order to respect the inherent dignity and identity of each human person. We value diversity because it is part of our history, our traditions and our future. We see diversity as an asset and a strength that adds to the richness of classroom learning. In my course, I strive to include students from diverse backgrounds and perspectives. I also encourage open dialogue and spaces for students to express their ideas and gain confidence. I am open to having difficult conversations and I will strive to create an inclusive classroom that values all perspectives. If at any time, the classroom experience does not live up to this expectation, please feel free to contact me via email or during office hours.

9.3 Incomplete Grade

An incomplete grade is defined in the Student Handbook as follows (note that the policy in the undergraduate student handbook applies to both undergraduate and graduate students): A temporary grade indicating that the student has a satisfactory record in work completed, but for unusual or unforeseeable circumstances not encountered by other students in the class and acceptable to the instructor is prevented from completing the course requirements by the end of the term. Please see <http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx> for additional information. Any such reason must be documented. Any incomplete request must be made at least two weeks before the final, and approved by the Dean of CDM. Any consequences resulting from a poor grade for the course will not be considered as valid reasons for such a request.

9.3.1 Retro-Active Withdrawal

CDM understands certain extenuating circumstances can hinder one's ability for academic success and completion of course work. Please see <http://www.cdm.depaul.edu/Current%20Students/Pages/Enrollment-Policies.aspx> for additional information.

9.3.2 Absence Notifications

In order to petition for an excused absence, students who miss class due to illness or significant personal circumstances should complete the Absence Notification process through the Dean of Students office. The form can be accessed at <http://studentaffairs.depaul.edu/dos/academicprocesses.html>.

Students must submit supporting documentation alongside the form. The professor reserves the sole right whether to offer an excused absence and/or academic accommodations for an excused absence.

10 Academic Integrity and Plagiarism

Posting work on online sites, such as CourseHero is strictly prohibited. All students are expected to abide by the University's Academic Integrity Policy which prohibits cheating and other misconduct in student coursework. Publicly sharing or posting online any prior or current materials from this course (including exam questions or answers), is considered to be providing unauthorized assistance prohibited by the policy. Both students who share/post and students who access or use such materials are considered to be cheating under the Policy and will be subject to sanctions for violations of Academic Integrity. These terms are further described below.

- **Cheating:** Cheating is any action that violates university norms or instructor's guidelines for the preparation and submission of assignments. This includes but is not limited to unauthorized access to examination materials prior to the examination itself, use or possession of unauthorized materials during the examination or quiz; having someone take an examination in one's place; copying from another student; unauthorized assistance to another student; or acceptance of such assistance.
- **Plagiarism:** Plagiarism is a major form of academic dishonesty involving the presentation of the work of another as one's own. Plagiarism includes but is not limited to the following:
 - Pasting homework solutions on emails or discussion boards.
 - The direct copying of any source, such as written and verbal material, computer files, audio disks, video programs or musical scores, whether published or unpublished, in whole or part, without proper acknowledgement that it is someone else's.
 - Copying of any source in whole or part without proper acknowledgement.
 - Submitting as one's own work a report, examination paper, computer file, lab report or other assignment that has been prepared by someone else. This includes research papers purchased from any other person or agency.
 - The paraphrasing of another's work or ideas without proper acknowledgement.
- **Complicity:** Complicity is any intentional attempt to facilitate any of the violations described above. This includes but is not limited to allowing another student to copy from a paper or test document; providing any kind of material—including one's research, data, or writing—to another student if one believes it might be misrepresented to a teacher or university official; providing information about or answers to test questions. More information can be found at <http://academicintegrity.depaul.edu/>. If you have any questions be sure to consult with your professor.

11 Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential. To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at:

csd@depaul.edu
Lewis Center 1420,
25 East Jackson Blvd.
Phone number: 312 362 8002
Fax: 312 362 6544
TTY: 773 325 7296

Dean of Students' Office The Dean of Students' Office (DOS) helps students navigate the college experience, particularly during difficulty situations such as personal, financial, medical, and/or family crises. For a list of support services and advocacy information, please visit <http://studentaffairs.depaul.edu/dos/>.

12 Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in CampusConnect.