

**Fall 2019**

**Class Information: IT 378 – Database Processing**

Time: M & W 9.35 – 10.50am OU 213E

11.00 – 12.15pm OU 213E

**Instructor:** Dr. Ronnie Jia

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Office: Old Union 304

Office Hours: M & W 8:30 – 9:30am, W 6:00 – 6.30pm & 9:20 - 9:50pm, or by appointment

**Text:** *Oracle 12c: SQL* (3e) by Joan Casteel, ISBN13: 978-1-305-25103-8

**Course Description:** This course is designed to provide students with an understanding of advanced database processing concepts and application. Main topics, as specified in the catalog, include: database concepts, with an emphasis on relational databases, data modeling, database design, DBMS functions, SQL, current trends, and database project.

**Prerequisite:** Successful completion (grade C or better) of IT 261 Systems Development I.

**Course Objectives:** Upon successful completion of this course, the student should understand:

1. What a database is, and what the main functions of a DBMS are
2. How to use entity-relationship models to design a database, evaluate alternate designs, and determine their levels of normalization
3. How to implement a database design in a relational DBMS
4. How to query and update a relational database using SQL

**Grading: There is no extra credit given at the end of the semester, so please don’t ask.**

*Undergraduate students*

A = 360-400 pts, B = 320-359 pts, C = 280-319 pts, D = 240-279 pts, F = less than 240 pts

*Graduate Students*

A = 370-400 pts, B = 330-369 pts, C = 300-329 pts, D = 260-299 pts, F = less than 260 pts

Note: One must average at least 83% across all tests to receive a course grade of “A”, average at least 73% across all tests to earn a “B” or higher, and average at least 63% to earn a “C”.

**Tests** (240 points)

There are four tests, all closed-book and noncumulative. Materials for the tests will be taken from lectures, labs, assignments, and other content posted on ReggieNet. **No make-up tests unless the student has a documented illness or emergency.** Punctuality is important; no one will be admitted once the first student turns in the test.

**Database Project** (70 points)

Students will work on a database design and implementation project to integrate and apply what you have learned in the class. Project deliverables and respective due dates will be provided in class at a later date. Submissions that are less than 24 hours late will be accepted with a 20% deduction; those that are more than 24 hours late will not be accepted unless there is a documented emergency. **The instructor reserves the right to assign different assignment/project grades to different team members based on team participation and contribution (i.e., no free rides).**

**Assignments** (90 points)

Effective learning of technical course material requires practice. To receive credit for lab assignments, the work must be checked \*in class\* by the instructor within the given timeframe. Without the instructor’s prior approval, submission via other means (e.g., email) will NOT be accepted and thus will not receive credit. **Team members who are absent from class will not receive credit for a team assignment**. No late work will be accepted unless the student has a documented illness or emergency.

**Attendance**

The absent student will be responsible for the materials, assignments and/or announcements missed.

**Bereavement policy**

In the event that a student experiences a death in the immediate family, the ISU Student Bereavement Policy applies. See <https://policy.illinoisstate.edu/students/2-1-27.shtml>. Note the need to provide notification and proper documentation.

**Professional Conduct**

The instructor is committed to creating a positive environment that is conducive to learning. Students are expected to conduct themselves in a professional manner, which includes but is not limited to the following:

1. Arrive at class on time. Late arrivals disrupt class.
2. Silence your cell phones and other electronic devices before entering the classroom.
3. Turn off computer monitor during lecture time.
4. Be respectful toward your instructor and classmates.
5. Use proper etiquette in your emails. Otherwise, they will be unacknowledged or returned without comment.
   1. Note your full name, course and section numbers in the subject line (and file name).
   2. Include a professional greeting (Dr. Jia, Professor Jia, or Prof. Jia are appropriate while “Hey” and Mr. Jia are not).
   3. Use proper spelling, grammar, punctuation, and capitalization.
   4. Include a signature line at the end of your message.

Unprofessional conduct may, at the instructor’s discretion, lead to a deduction of the student’s final grade.

**Students with Disabilities**

Any student needing to arrange a reasonable accommodation for a documented disability and/or medical/mental health condition should contact Student Access and Accommodation Services at 350 Fell Hall, [(309) 438-5853](tel:%28309%29%20438-5853), or visit the website at [StudentAccess.IllinoisState.edu](http://StudentAccess.IllinoisState.edu).

**University Policy on Recording/Photographing Lectures**

Per University policy, students must obtain written permission from the instructor if they wish either to photograph classroom lectures or discussions or to record them using audio or video devices. This restriction includes visual materials that accompany the lecture/discussion, such as lecture slides, whiteboard notes/equations, etc. Such recordings are to be used solely for the purposes of individual or group study with other students enrolled in the class in that semester.  They may not be reproduced, shared in any way (including electronically or posting in any web environment) with those not in the class in that semester.  Students with disabilities who need to record classroom lectures or discussions must contact Student Access and Accommodation Services to register, request and be approved for an accommodation.  Students who violate this policy may be subject to both legal sanctions for violations of copyright law and disciplinary action under the University’s Code of Student Conduct.

**Academic Dishonesty**

*Any incident of plagiarism or cheating will not be tolerated and will lead to sanctions for \*all\* parties involved*. It will result in a zero for the test or assignment, or an “F” grade for the course, notification of the Advisor, Director of IT, and referral to the Dean of Students, which may impose further sanctions. The following is an excerpt from the ISU *Code of Student Conduct* (<http://deanofstudents.illinoisstate.edu/conflict/conduct/code/>). If you have questions, be sure to ask.

Academic Dishonesty:

Students are expected to be honest in all academic work. A student’s attachment of their name on any academic exercise shall be regarded as assurance that the work is the result of the student’s own thought, effort, and study.

Violations include such behavior as:

1. Possessing or utilizing any means of assistance (books, notes, papers, articles, third parties, etc.) to complete any assignment, quiz, or examination unless specifically authorized by the instructor. Students are prohibited from conversation or other communication in examinations except as authorized by the instructor.
2. Acting with the intent to deceive the person in charge, such as falsifying data or sources, providing false information, etc.
3. Plagiarizing. For the purpose of this policy, plagiarism is the unacknowledged appropriation of another’s work, words, or ideas in any themes, outlines, papers, reports, speeches, computer programs, artwork, musical scores, performance, or other academic work, regardless of intent. This includes all forms of intellectual property that can be copyrighted, patented, or trademarked, whether published or unpublished. Students must ascertain from the instructor in each course the appropriate means of documentation and/or attribution.
4. Submitting the same paper for more than one University course or academic requirement without the prior approval of the instructors. A student may only submit an assignment once during their affiliation with the University unless provided explicit permission of the instructors.
5. Willfully giving or receiving unauthorized or unacknowledged assistance on any assignment. This may include the reproduction and/or dissemination of test materials. Both parties to such collusion are considered responsible.
6. Substituting for another student in any academic assignment.
7. Being involved in the unauthorized collection, distribution advertisement, solicitation, or sale of term papers, research papers, or other academic materials completed by a third party.

In cases of group assignments, unless otherwise indicated by the instructor, all parties to the assignment are responsible for the submission of any final product, and bear responsibility for the integrity of the product. Students participating in group projects may be held responsible for the actions of other group members unless it can be established that a group member was not aware, and reasonably could not have been aware, of any material that violates University expectations.

Academic integrity expectations apply to all forums used for the collection and dissemination of knowledge, including in the classroom, written and electronic assignments, online participation, field work, and publications.

For the purpose of this policy, it should be noted that the University holds graduate students to a higher standard given the academic rigor of graduate programs and the fact that students in graduate programs are already degreed students. As such, graduate students may face more severe levels of sanctioning for academic misconduct, and may also face repercussions in their academic departments and assistantships.

**Major Topics Covered** (tentative)

*Database Concepts*

Module 1 Database Systems

Module 2 The Relational Database Model

*Database Modeling*

Module 3 Entity Relationship (ER) Modeling

Module 4 Advanced Data Modeling

*Test 1 (typically Week 4)*

Module 5 ERD Conversion & Relational Schema

Module 6 Normalization

*Test 2 (typically Week 6)*

*Database implementation: SQL*

Module 7 Creating tables and constraints

Module 8 Data Manipulation & Transac. Control

*Test 3 (typically Week 8)*

Module 9 Writing queries

Module 10 Joining tables

*Advanced Topics*

AT 1 Procedural SQL: Triggers

AT 2 Transaction processing

AT 3 Database connectivity: JDBC

AT 4 Object-relational mappings

AT 5 BI, data analytics & NoSQL

*Test 4 (typically final exam week)*