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# CS430 – DATABASE MANAGEMENT SYSTEMS

## INSTRUCTOR INFORMATION

Instructor: Russ Wakefield

Email: [Russ.Wakefield@colostate.edu](mailto:Russ.Wakefield@colostate.edu)

Communication Policy: Responses to emails will be provided within 3 days

## PREREQUISITES FOR COURSE

CS314 **or** CS370

Proficiency in Java is a requirement.

Grade of C required.

## COURSE DESCRIPTION & OBJECTIVES

This is an introductory course on Database Systems. It introduces the students to the fundamental concepts and methods necessary for designing and implementing database systems. Emphasis will be on the theory and implementation of database systems rather than any commercially available database system.

Upon completion of this course, students should be able to:

- Recognize the elements and components of a Database System.
- Describe relational models and the connection to Database Systems.
- Apply algebra and calculus principles to the construction of Database Systems.
- Define SQL and the use of queries in Database Systems.
- Define the various indexing options (storage, tree-based, and hash-based) that are available in storage systems.
- Explain transaction management in the context of Database Systems.
- Recognize the importance of developing a recovery plan for Database Systems.

## TEXTBOOK / COURSE READINGS

A. Silberschatz, H. Korth, S. Sudarshan  
**Database System Concepts**, 7th edition,  
McGraw Hill

## COURSE MATERIALS & EQUIPMENT

Several of the lab assignments require accessibility to the Computer Science machines through a Secure Shell such as Putty or SSH. The exams are given using the Respondus LockDown browser,

which only runs on Windows and Macs and requires a camera and a microphone. You **MUST** have access to a machine fitting these requirements.

Putty or SSH: [Data Privacy Information](#)

## PARTICIPATION/BEHAVIORAL EXPECTATIONS

Delivery of course assignments is done using Canvas, it is expected the student will access Canvas at least once a day. In addition, the student is expected to have set their preferences to receive announcements in Canvas immediately as this will be the primary method the class will use to set expectations.

Please review the [core rules of netiquette](#) for some guidelines and expectations on how to behave in an online learning environment.

## SUMMER SESSION INFORMATION

If you are taking this course over the summer, please note that we go at double speed, completing an entire 4 credit course in just 8 weeks. This means that you will have twice as much work each calendar week, it will be an equivalent workload to taking 8 credits during a regular semester for just this one course. Please plan other courses over the summer accordingly so that you have enough time to complete each course.

## COURSE POLICIES (LATE ASSIGNMENTS, MAKE-UP EXAMS, ETC.)

### LATE AND MAKEUP POLICY

**Unit and Final Exams:** Make-up (late) exams are only given for extraordinary circumstances (e.g., illness, family emergency). Students must consult with the instructor as soon as possible, preferably before the start of the exam. Course examination dates are listed in Canvas; be aware of them and plan accordingly.

**Labs:** Unless otherwise specified, lab assignments are to be submitted electronically through Canvas. Specifics will be included in each assignment. Always check the assignment page for due dates and late policies. Labs may be made up with an excused absence.

**Worksheets:** Unless otherwise specified, worksheets are to be submitted electronically through Canvas as a reply to a discussion. Specifics will be included in each assignment. Always check Canvas for due dates and late policies. Worksheets may be made up with an excused absence.

**Makeup Work:** Makeup work will need to be explicitly negotiated. The material in this course (including learning to meet due dates) is important. Excessive absences and/or missing work will impact your grade.

**Excused Absence:** Documentation will be required for the absence to be excused. It is YOUR responsibility to PLAN on getting the appropriate documentation.

- Illness(personal) - note from the medical institution (on letterhead) with the exact dates to be excused.
- Illness in the family - note from the medical institution (on letterhead) with the exact dates to be excused. See above for projects.
- Death in the family - an online pointer or a paper copy of the obituary will suffice.
- University sanctioned events- these do not happen randomly, please bring your documentation to the instructor early and work with the instructor to complete the work **BEFORE** the due date.

**Events that are excused:**

- Illness with documentation
- Death or illness in the family
- University sanctioned events
- Weddings - only if all work is accomplished ahead of time.

**Events that are not excused:**

- Weddings - for any work done after the fact.
- Car problems
- Illness without documentation
- Early / Late travel plans

## GRADING POLICY

Below is the default grading scheme for this course. While the instructor reserves the right to change these cutoffs, you will not receive a grade lower than what is shown. If you get an average of 80% or more, you will get a B (not a B-) but, depending on the score, the instructor may set cutoffs so that with a high enough score above an 80 you might get a B+ or A-.

| Grade | Range   |
|-------|---------|
| A     | 90-100% |
| B     | 80-89%  |
| C     | 70-79%  |
| D     | 60-69%  |
| F     | 0-59%   |

As a student enrolled in this course, one of your responsibilities is to submit course work by the due dates listed in Canvas. With that said, I take my role as your instructor very seriously, and, in fact, I care about how well you do in this course and that you have a satisfying, rewarding experience.

To that end, it is my commitment to you to respond individually to the work you submit in this class and to return your work in a timely manner. Smaller, weekly assignments and quizzes will be returned within 5 days and major assignments, exams, and essays will be returned within 1 week. (If, however, due to unforeseeable circumstances, the grading of your work takes longer than the times I have listed here, I will keep you informed of my progress and make every effort to return your work with feedback as soon as I can.)

| ASSIGNMENT      | GRADE PERCENTAGE |
|-----------------|------------------|
| Worksheets      | 20%              |
| Lab Assignments | 35%              |
| Module Quizzes  | 10%              |
| Unit Exams      | 35%              |
| <b>Total:</b>   | <b>100 %</b>     |

\*Keep a copy of all work created for the course, including work submitted through Canvas course learning management system.

## CANVAS INFORMATION & TECHNICAL SUPPORT

Canvas is where course content, grades, and communication will reside for this course.

- [Login for Canvas](#)
- [Canvas Support](#)
- For passwords or any other computer-related technical support, contact the [Central IT Technical Support Help Desk](#).
  - (970) 491-7276
  - [help@colostate.edu](mailto:help@colostate.edu)

The [Technical Requirements](#) page identifies the browsers, operating systems, and plugins that work best with Canvas. If you are new to Canvas quickly review [the Canvas Student Orientation](#) materials.

## ACADEMIC INTEGRITY & CSU HONOR PLEDGE

This course will adhere to the CSU [Academic Integrity/Misconduct](#) policy as found in the General Catalog and the [Student Conduct Code](#).

Academic integrity lies at the core of our common goal: to create an intellectually honest and rigorous community. Because academic integrity, and the personal and social integrity of which academic integrity is an integral part, is so central to our mission as students, teachers, scholars, and citizens, I will ask that you affirm the CSU Honor Pledge as part of completing your work in this course.

Further information about Academic Integrity is available at CSU's [Academic Integrity - Student Resources](#).

## UNIVERSAL DESIGN FOR LEARNING/ACCOMMODATION OF NEEDS

I am committed to the principle of universal learning. This means that our classroom, our virtual spaces, our practices, and our interactions be as inclusive as possible. Mutual respect, civility, and the ability to listen and observe others carefully are crucial to universal learning.

If you are a student who will need accommodations in this class, please contact me to discuss your individual needs. Any accommodation must be discussed in a timely manner. A verifying memo from [The Student Disability Center](#) may be required before any accommodation is provided.

The Student Disability Center (SDC) has the authority to verify and confirm the eligibility of students with disabilities for the majority of accommodations. While some accommodations may be provided by other departments, a student is not automatically eligible for those accommodations unless their disability can be verified and the need for the accommodation confirmed, either through SDC or through acceptable means defined by the particular department. Faculty and staff may consult with the SDC staff whenever there is doubt as to the appropriateness of an accommodative request by a student with a disability.

The goal of SDC is to normalize disability as part of the culture of diversity at Colorado State University. The characteristic of having a disability simply provides the basis of the support that is available to students. The goal is to ensure students with disabilities have the opportunity to be as successful as they have the capability to be.

Support and services are offered to student with functional limitations due to visual, hearing, learning, or mobility disabilities as well as to students who have specific physical or mental health conditions due to epilepsy, diabetes, asthma, AIDS, psychiatric diagnoses, etc. Students who are temporarily disabled are also eligible for support and assistance.

Any student who is enrolled at CSU, and who self-identifies with SDC as having a disability, is eligible for support from SDC. Specific accommodations are determined individually for each student and must be supported by appropriate documentation and/or evaluation of needs consistent with a particular type of disability. SDC reserves the right to ask for any appropriate documentation of disability in order to determine a student's eligibility for accommodations as well as in support for specific accommodative requests. The accommodative process begins once a student meets with an accommodation's specialist in the SDC.

### THIRD-PARTY TOOLS/PRIVACY

Please note that this course may require you to use third-party tools (tools outside of the Canvas learning management system), such as Skype and others. Some of these tools may collect and share information about their users. Because your privacy is important, you are encouraged to consult the privacy policies for any third-party tools in this course so that you are aware of how your personal information is collected, used and shared.

### COPYRIGHTED COURSE MATERIALS

Please do not share material from this course in online, print, or other media. Course material is the property of the instructor who developed the course. Materials authored by third parties and used in the course are also subject to copyright protections. Posting course materials on external

sites (commercial or not) violates both copyright law and the CSU Student Conduct Code. Students who share course content without the instructor's express permission, including with online sites that post materials to sell to other students, could face appropriate disciplinary or legal action.

## UNDOCUMENTED STUDENT SUPPORT

Any CSU student who faces challenges or hardships due to their legal status in the United States and believes that it may impact their academic performance in this course is encouraged to visit [Student Support Services for Undocumented, DACA & ASSET](#) for resources and support. Additionally, only if you feel comfortable, please notify your professor so they may pass along any additional resources they may possess.

## TITLE IX/INTERPERSONAL VIOLENCE

For the full statement regarding role and responsibilities about reporting harassment, sexual harassment, sexual misconduct, domestic violence, dating violence, stalking, and the retaliation policy please go to: [Title IX – Sexual Assault, Sexual Violence, Sexual Harassment](#).

If you feel that your rights have been compromised at CSU, several resources are available to assist:

- Student Resolution Center, 200 Lory Student Center, 491-7165
- Office of Equal Opportunity, 101 Student Services, 491-5836

A note about interpersonal violence: If you or someone you know has experienced sexual assault, relationship violence and/or stalking, know that you are not alone. As instructors, we are required by law to notify university officials about disclosures related to interpersonal violence. Confidential victim advocates are available 24 hours a day, 365 days a year to provide support related to the emotional, physical, physiological and legal aftermath of interpersonal violence. Contact the Victim Assistance Team at: 970-492-4242.

## RELIGIOUS OBSERVANCES

CSU does not discriminate on the basis of religion. Reasonable accommodation should be made to allow individuals to observe their established religious holidays. Students seeking an exemption from attending class or completing assigned course work for a religious holiday will need to fill out the [Religious Accommodation Request Form](#) and turn it in to the Division of Student Affairs, located on the second level of the Administration building.

Once turned in, the Division of Student Affairs will review the request and contact the student accordingly. If approved, the student will receive a memo from the Dean of Students to give to their professor or course instructor.

Students are asked to turn in the request forms as soon as the conflict is noticed. Similarly, unanticipated conflicts requiring a religious observance, such as a death in the family, can also be reviewed.

## CSU PRINCIPLES OF COMMUNITY

**Inclusion:** We create and nurture inclusive environments and welcome, value and affirm all members of our community, including their various identities, skills, ideas, talents and contributions.

**Integrity:** We are accountable for our actions and will act ethically and honestly in all our interactions.

**Respect:** We honor the inherent dignity of all people within an environment where we are committed to freedom of expression, critical discourse, and the advancement of knowledge.

**Service:** We are responsible, individually and collectively, to give of our time, talents, and resources to promote the well-being of each other and the development of our local, regional, and global communities.

**Social Justice:** We have the right to be treated and the responsibility to treat others with fairness and equity, the duty to challenge prejudice, and to uphold the laws, policies and procedures that promote justice in all respects.

## DIVERSITY AND INCLUSION

The [Mission, Vision, and Focus](#) webpage of the Vice President for Diversity includes a comprehensive statement of CSU's commitment to diversity and inclusion.