CS 122A/EECS 116 Introduction to Data Management
Winter 2025

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TA Office Hours:
Monday: 9 - 10:30 am (ICS458A); 2 - 3 pm (TBD)
Tuesday: 9 - 10:30 am (TBD)
Wednesday: All discussion sessions are Office Hours
Thursday: 9 - 10:30 am (ICS458B); 2:30 - 4 pm (TBD)
Friday: 10 - 11:30 am , 2 - 3:30 pm (TBD)

Lectures: TuTh 11AM–12:20PM HSLH 100A
Optional (highly Encouraged) textbook:
Raghu Ramakrishnan & Johannes Gehrke, Database Management Systems, 3rd Edition, McGraw-Hill 2012. ISBN-13: 978-0072465631, ISBN-10: 0072465638

Course Description: This course provides students with an introduction to the design of databases and the use of database management systems in support of applications. Students will gain exposure to how relational database management systems are used to manage an actual database. Time permitting, the course will also touch briefly on advanced database management topics such as semi-structured data management and/or transactions.

This course is aimed at database design and the use of database management systems in building database applications. It feeds into a follow-on project course, CS122B, whose focus is data-centric Web applications. The CS122A/B course sequence does NOT cover the internal workings of database systems; that material is covered in the undergraduate course CS122C (or its graduate equivalent, CS222) and the graduate-level follow-on course CS223. (The course textbook also delves further into that material for those students who are curious about what goes on under the hood.) Interested students are strongly encouraged to take one, two, or all of these courses; CS122B and CS122C/CS222 are independent, as each one requires only CS122A as their required database background. Also available as a new CS122A follow-on course is CS1222D, whose focus is on new post-relational data management technologies, i.e., "NoSQL" databases and Big Data management platforms.
Prerequisite(s): IC SCI 33 (with C or higher) OR EECS 114

Course Learning Objectives:
After successful completion of this course, students should be able to:

1. Design and develop entity-relationship (E-R) for an application.
2. Utilize a relational data model and E-R design to build DB relations.
3. Discuss and apply relation database design principles.
4. Apply abstract query languages such as relational algebra to optimize.
5. Create and use industry-standard query language, SQL, to interact with DBs.
6. Understand indexing and physical database design.

Course Organization: We will be utilizing Canvas, Gradescope, Google Drive, & EdDiscussion. Canvas will be the primary source of reference for course resources. EdDiscussion will be the main avenue of communication. Google Docs and Drive will be used to distribute assignments and associated materials. Gradescope will be used for homework submissions and returning graded assessments.

Course Lecture attendance is expected and highly encouraged. Questions are encouraged. Generally, lectures may not be recorded or remotely accessible. Students are responsible for all missed information in lectures, regardless of the reason for absence.

Course Discussion will be drop-in TA assistance hours, similar to Office Hours, on most weeks. Students are encouraged to attend ANY of the scheduled discussion times to gain clarification or assistance on the course materials. If many students are in attendance the TA with review the topics for the group rather than answer questions 1-on-1.

Course Announcements will be posted to EdDiscussion and pinned to the top for the relevant period. All students are expected to read all course announcements. Check EdDiscussion regularly and adjust your email preferences accordingly.

Course Components

Homework Assignments (40%) are a main component of the course. The goal of these assignments is to apply the concepts from the modules to design, build, and use a database for a given application.

All assignments must be completed individually. Students may discuss the assignment itself (i.e. understanding of the assignment, general approach, general concepts) with their peers/tutors/TAs but are to complete the work and specifics of the assignment themselves. **Peer/Pair programming** of the assignment will be considered academic dishonesty.

Offering and **accepting** any piece of code from another person (online or in person) is an act of **plagiarism**, which is a serious offense and **all involved parties will be penalized according to the Academic Honesty Policy**. General discussion about the assignment itself or course concepts between students is encouraged. When in doubt, direct your questions to the professor, the TAs/senior

tutors, and/or the lab tutors.

Up to 2 homework assignments will be accepted late (**up to 24 hours after the deadline**) without penalty. These will be referred to as *Late passes*.

Late passes:

- are considered as used when an assignment is submitted within 24 hours after the original homework deadline.
- cannot be stacked (i.e. more than 1 late pass may not be used for a single assignment).

To use a late pass, solely submit your assignment within the 24-hour late period. It is the student's responsibility to track late pass usage via Gradescope or Canvas Gradebook.

Midterm Exams (2 midterms, 20% each) are held during lecture time. The midterm will focus on the material covered in the topics presented prior to the exam. The exams are timed, closed book, and closed notes.

Project (15%) The project will be a hands-on component of the course, performed in groups of 4 students. The purpose of the project is for students to apply the concepts they have learned in a project that mimics a real application of databases.

Participation (5%) Participation scores are based on attendance, participation in in-class discussions, and in-class worksheets/quizzes.

Course Grading: Final grades in the course are determined based on the total weighted score. Individual metrics are not "curved". Letter grade cut-offs will be determined based on overall student performance - never above the standard letter grade distributions (93+ A, 90-92.99 A-, 87-89.99 B+, etc). Cut-offs are determined based on the student performance within the course offering, not based on the percentage or number of students per letter grade. **This means if everyone does very well, everyone will get an A!**

Note that the course grading scheme may be modified during the quarter if an issue with an overall lack of participation, widespread academic dishonesty, or disruptive extraneous circumstances emerge.

Grading Concerns must be submitted within 7 days of the grade release (or shorter for assignments/exams in the last week and finals week), per posted instructions. After this period grading concerns will not be accepted and the assigned grade will be considered final. Grading concerns will be addressed as quickly as possible, but are subject to delay due to other grading. All grading concerns will be resolved before final grades are calculated. Any grading concern must include a detailed explanation of the specific grading issues and the reason for the believed

correction.

EdDiscussion can be a useful tool for the course when used properly. For example, a question can be answered quickly by your classmates, the TAs, the Readers, and the Instructor. Rather than emailing your course or homework content questions to the teaching staff, you will be expected to post your questions on EdDiscussion. However, it is important to use EdDiscussion constructively in order to create a valuable and supportive community. All students are expected to follow these guidelines:

- Create a descriptive summary of your question.
- Properly tag your post with the most appropriate tag(s) for the question. If an appropriate tag does not exist, use other.
- Prior to posting a question, use the tags and the search box to find existing question(s) that may answer your question. Avoid re-asking questions. Also, search the provided course resources for your answer prior to posting.
- In the details of your question/post, be as specific and descriptive with your question as possible. Include a GENERIC example that illustrates your issue. EdDiscussion posts are not a place to discuss the finer details of answers to HW problems - in other words, it is not a place to post, request, or compare answers to specific problems! (Doing so would actually risk your violating the Academic Honesty Policy, as everyone is expected to ultimately do their own work.)

Most importantly, EdDiscussion is a forum for course-related content, additional learning, and assistance. If you have questions about assignments, technical problems that need troubleshooting, or other questions that might be of interest to other students, they must be posted to EdDiscussion and not emailed to the instructor or TA.

Academic Integrity: We encourage collaborative learning through discussion of assignment requirements and course concepts to enhance understanding of the course material and concepts. However, any submitted work for a grade must be the sole work of the student independently. **Peer/Pair programming** or jointly solutions on any graded component will be considered academic dishonesty.

Offering and **accepting** any piece of work/code from another person (online or in person) is an act of **plagiarism**, which is a serious offense and **all involved parties will be penalized according to the Academic Honesty Policy**. Any evidence that code or solutions have been copied, shared, or transmitted in any way (this includes using source code downloaded from the Internet or written by others in previous semesters!) will be regarded as evidence of academic dishonesty.

This course has a ZERO-tolerance policy on cheating. Violations of academic integrity will be referred to the Office of Academic Integrity and Student Conduct. Any student found to be involved in cheating or aiding others in doing so will be

academically prosecuted to the maximum extent possible. Typically, this means **failure of the course in its entirety**. All students will be expected to adhere to the UCI and ICS Academic Honesty policies (see UCI Academic Honesty Policy and ICS Academic Honesty Policy to read their details).

Course Material Copyright: Lectures and course materials, including lecture notes, slides, presentations, quizzes, tests, exams, practice problems and solutions, and similar materials, are protected by copyright. Copyrighted course materials may not be further disseminated. Selling, preparing, or distributing for any commercial purpose course lecture notes or video or audio recordings of any course unless authorized by the University in advance and explicitly permitted by the course instructor in writing. The unauthorized sale or commercial distribution of course notes or recordings by a student is a violation of these Policies whether or not it was the student or someone else who prepared the notes or recordings. This includes providing materials to commercial course material suppliers such as CourseHero and other similar services. Students who publicly distribute, display, or help others publicly distribute or display copies (or modi ed copies) of an instructor's course materials are in violation of UC's 2005 policy on the Use of Recordings of Course Presentations.

This course is provided by The University of California, which has policies regarding copyright. Materials used in connection with this course may be subject to copyright protection. Refer to the information provided in each video/ le/module/unit for copyright information for each work. The course content related video/file/module/unit was created to be used in compliance with the TEACH Act. 17 U.S.C. Â110(2). Copyrighted course materials may not be further disseminated. Learn more about copyright law and restrictions at: http://libguides.richmond.edu/copyright.

Students with Disabilities: The University of California, Irvine, is committed to providing a barrier-free environment for learning and an electronic environment that is accessible to everyone, including individuals with disabilities. If you have a disability and feel you need accommodations in this program or a course, please contact the Disability Services Center (DSC). DSC-approved accommodations will be provided for students who present a Faculty Notification Letter from the DSC.

Diversity & Inclusion: I and the staff members of this course will uphold the University of California, Irvine's commitment to ensuring equality and valuing diversity in accordance with applicable Federal and State law and University policy. UCI recognizes that our individual differences can deepen our understanding of one another and the world around us, rather than divide us. In this class, people of all ethnicities, genders and gender identities, religions, ages, sexual orientations, disabilities, socioeconomic backgrounds, regions, and nationalities are strongly encouraged to share their rich array of perspectives and experiences. If you feel your differences may in some way isolate you from UCI's community or if you have a need for any special accommodations, please speak with the instructor early in the quarter about your concerns and what we can do together to help you become an active and engaged member of our class and community.

Student Support Services: A wide variety of campus resources are available to assist students, including:

- *UCI Student Portal*: https://students.uci.edu/
- *UCI Disability Service Center*: https://dsc.uci.edu/
- *UCI Learn Anywhere*: Remote learning resources for UCI students provided by DTEI and OIT are available at https://sites.uci.edu/learnanywhere/.
- *The Learning & Academic Resource Center (LARC)*: Online Tutoring is available. https://larc.uci.edu/
- *Technical Support*: Contact the OIT helpdesk at oit@uci.edu or call (949) 824-2222 for all technical support and training needs.
- *Canvas Support Hotline*: 855-213-7130
- *UCI Wellness, Health, and Counseling*: For more information,

  please visit https://whcs.uci.edu/
- *UCI Consulting Center*: http://www.counseling.uci.edu
- *UCI Fresh Needs Hub*: https://basicneeds.uci.edu/
- *UCI LGBT Resource Center*: http://lgbtrc.uci.edu
- *Undocumented Student Support*: http://dreamers.uci.edu
- *Student Pandemic Resources*: https://uci.edu/coronavirus/students/index.php