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| **Database Design**  **CIS 310-02** |
| **Fall 2020** |

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| **I. Instructor** | |
| **Instructor** | Dr. Sandeep Goyal |
| **Contact information** | Office: 301 College of Business  Telephone: 502-852-4780  Fax: 502-852-4799  Email: Sandeep.Goyal@louisville.edu |
| **Office hours** | By appointment |

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| **II. Course Information** | |
| **Class time** | Fully Online class |
| **Required text** | *Database Systems: Design, Implementation, and Management, 13th Edition* Carlos Coronel, Steven Morris, Cengage Learning, 2018.  Used textbooks are okay. You do not need any access code to work on exercises or homework problems.  Other resources to be provided by the instructor such as data files and additional problems/cases. |
| **Course description** | **This is a fully online class**. That means you are required to have reliable technology (see list below) to complete all course requirements or be willing to travel to campus to use an open lab. This class is not self-paced. There are weekly assignments with deadline dates and times. This class has the same amount of work as the on-campus section. Please make sure you set aside enough time for this course. While we will not “meet” you will still need to fulfill all of the course requirements as spelled out in this syllabus.  This course will provide a solid and practical foundation for the design and implementation of database systems. Emphasis will be on the relational database model, with significant coverage of basic relational database concepts, normalization, E-R modeling, and SQL. Additional topics may include fundamental transaction management concepts, and more recent data storage technologies if time permits. Course software includes SQL server.  Main features of the course are   * A hands-on approach to database design, implementation, and use * Detailed coverage of E-R modeling as the basis for database design * Extensive coverage of the relational model, normalization, and SQL * Coverage of current topics such as big data (as time permits) * Coverage of the database life cycle as an integral part of the systems development life cycle * An excellent starting point for a successful career in the database field |
| **Prerequisites** | CIS 199, CIS 300/CIS 305 Please note that the prerequisites will be strictly enforced. Enrolled students who do not have the prerequisites will be administratively removed from the class. |
| **Learning objectives** | * Introduce the fundamentals of relational database design and implementation * Introduce entity relationship modeling concepts and techniques * Introduce the basic features of the current version of SQL * Introduce the fundamentals of database administration * Introduction to current topics if time permits |
| **Final drop date** | See: <http://louisville.edu/calendars/academic/undergrad-grad.html> |
| Expectations of outside time required for class | You are expected to spend a minimum of 10 hours a week on course related activities such as working on assignments, preparation for class, listening to video recordings etc. |
| Other utilities | You would be required to use a Windows or a Mac laptop to watch video recordings in Panopto. Panopto recordings are available via blackboard and do not require anything other than a web browser and access to high-speed internet. |
| Course Expectations | Check Blackboard Announcements every day for important communications. Even better, subscribe to them. Instructions are posted on Blackboard.  Review the Course Schedule frequently to ensure that you are aware of what topics will be covered each week and when assignments are due.  Collaborate with other students (when appropriate) to enhance your understanding of the material but do not plagiarize. Cases of plagiarism are reported to the Dean’s office in the College of Business without prejudice and all students involved will face the consequences of their actions.  Do not procrastinate! Keep up with the flow of all course-related activities and assignments or your final grade will indeed suffer.  Since this is an online course, you are responsible for managing your time wisely. I would strongly recommend you devote at least an hour at the same time of day, several days a week just as if you were in a traditional classroom to engage in the online course.  Work hard. Play harder. And, have a whole bunch of fun while working with Data! |
| Late assignment policy | I will not accept assignments as “late” or permit “make-up” tests unless a notable extenuating circumstance occurs and you provide me with sufficient documented proof of the extenuating circumstance preferably before the due date, but no later than two days later. Documented proof includes, but is not limited to, an Athletic Department Excused Absence memo, physician’s note on the practice’s letterhead, hospital discharge paperwork, obituary notice (for a family member), etc. Written documentation must include the phone number of a person who can verify the situation and reason for your tardiness. Prior notification is expected, except in the case of an emergency - please e-mail me as soon as you are aware of any type of extenuating circumstance developing. Remember that an unexpected situation does not excuse you from the responsibility and requirement of assigned work, regardless of course activity type (homework, quiz, etc.). |
| Email Policy | Barring server reliability, availability, performance, and several other factors, I strive to reply to every email within 24 hours or less. I reply to **EVERY** email.  E-mail, by its very nature, is not guaranteed deliverable.  If you have not received a reply to your email for 48 hours, please assume I did not get it and resend your email.  You should always include your course name “CIS 310: Database Design” along with a meaningful text topic in the subject line of each message. I get a large number of emails every day from students. Messages without a properly formatted subject line makes it difficult for me to prioritize your email over other emails.  Most e-mail services are not secure, so it should not be used for transmitting any type of sensitive, confidential, proprietary, or personal information. |
| Exams | Exam weeks are noted on the **Course Schedule**. The exam would be available from 8:00am on Monday to 11:59pm on Thursday of the week. If you cannot take a test for a **valid** reason, you must notify me **PRIOR** to the date of the test. I will only offer a make-up test for unusual and extenuating circumstances and the student is responsible for making arrangements **PRIOR** to the scheduled test week; otherwise, there will be **NO** alternate test dates. Failure to take any test will result in you earning a grade of **zero** for that test unless I have given you **PRIOR** permission to take it late. |
| Weekly assignments | Unless I notify you otherwise, **every week has a class exercise and a quiz due.** All assigned work is due on the dates noted in the weekly plan posted on blackboard (usually by 11:59pm on Thursday of every week). Assignments not submitted by the due date and time will not be accepted unless proof of an extenuating circumstance (as previously noted) is provided. I do not consider technology-related issues a sufficient justification for submitting assignments late. There are no make-up opportunities available for weekly assignments.  Even though SQL assignments are group assignments, every group member has to create the DB for these assignments, if required, in their assigned individual SQL Server account. Failure to do so would result in individual score of zero even if the group score is different.  If technical issues preclude you from completing an assignment, **contact the UofL IT Help Desk at (502) 852-7997** to report any issue you are having. If the Help Desk is unable to assist you or resolve your issue in a timely manner, then you should e-mail me the assignment file(s) with an appropriate explanation and the Help Desk ticket number **PRIOR** to the due date/time published in the Course Schedule.  Do **NOT** wait until the last minute, as assignment items may automatically close *shortly after* the due date and time. Please note that I get unusually high number of emails close to the deadline for assignments and exams. 24 hours reply policy as specified in the email policy below applies. Not receiving a quick reply does not constitute a valid excuse for late submission. |

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| **III. Evaluation** | | | |
| **Grading scale** | A 93.0 – 100%  A- 90.0 - 92.9%  B+ 87.0 - 89.9%  B 83.0 - 86.9% | B- 80.0 - 82.9%  C+ 77.0 - 79.9%  C 73.0 - 76.9%  C- 70.0 - 72.9%  D+ 67.0 - 69.9% | D 63.0 - 66.9%  D- 60.0 - 62.9%  F 0.00 - 60.0%  **EF** (Earned Failure) or **UF** (Unearned Failure) |
| **Grading scheme** | The student's course score will be determined as follows:   |  |  | | --- | --- | | **Component** | **Points** | | Final exam | 100 points | | Weekly Quizzes | 150 points | | Exercises | 100 points | | Mid-term exams (2 X 75 Points each) | 150 points | |  |  | | **Total** | **500 points** | | | |

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| **IV. Schedule** | |
| **Week** | **Topic**  **Note: Unless explicitly noted, all assignments are individual and are due 11:59pm on Thursday of the week it is assigned** |
| 1  Aug 17 | Introduction to Class Understanding Database Systems  **Assignments due:**  Exercise 1: 5 multiple choice questions; unlimited attempts; 2.5 points  Quiz 1: 5 multiple choice questions; one attempt; once you start the quiz, you have to complete it; 10 points  **Sign-up for Groups: Sign-up link under Weekly Rescordings.** |
| 2  Aug 24 | Data Models  The Relational Database Model  **Assignments due:**  Exercise 2 Multiple Choice: 5 multiple choice questions; unlimited attempts; 2.5 points  Exercise 2 Problem Solving: **Group Assignment**; unlimited attempts but only last attempt graded; 5 points  Quiz 2: 5 multiple choice questions; one attempt; once you start the quiz, you have to complete it; 10 points |
| 3  Aug 31 | Entity Relationship (ER) Modeling  **Assignments due:**  Exercise 3 Multiple Choice: 5 multiple choice questions; unlimited attempts; 2.5 points  Exercise 3 Problem Solving: **Group Assignment**; unlimited attempts but only last attempt graded; 5 points  Quiz 3: 5 multiple choice questions; one attempt; once you start the quiz, you have to complete it; 10 points |
| 4  Sep 7 | Advanced Data Modeling  **Assignments due:**  Exercise 4 Multiple Choice: 5 multiple choice questions; unlimited attempts; 2.5 points  Exercise 4 Problem Solving: **Group Assignment**; unlimited attempts but only last attempt graded; 10 points  Quiz 4: 10 multiple choice questions; one attempt; once you start the quiz, you have to complete it; 20 points |
| 5  Sep 14 | Catch-up Week  No assignments due this week. Use this week to go over the materials in prior week and prepare for the upcoming mid-term exam. |
| 6  Sep 21 | **Mid-term exam I**   1. Once you start the exam, you have to finish the exam 2. You would have **strict three hours** to finish the exam 3. You cannot leave and come back to the exam 4. Exam available **8am on Monday of week 6** and is due at **11:59pm on Thursday of week 6** 5. Exam is worth 75 points |
| 7  Sep 28 | Physical Database Design  **Assignments due:**  Exercise 5 Problem Solving: **Group Assignment**; unlimited attempts but only last attempt graded; 15 points  Quiz 5: 5 multiple choice questions; one attempt; once you start the quiz, you have to complete it; 10 points |
| 8  Oct 5 | **Fall Break**  Introduction to SQL Server  **Assignment due:**  Test your SQL Server account to ensure there are no problems. Reach out to me if you do have issues with your individual accounts. No deliverables this week. |
| 9  Oct 12 | Normalization of Database Tables  Denormalization of Database Tables  **Assignments due:**  Exercise 6 Problem Solving: **Group Assignment**; unlimited attempts but only last attempt graded; 15 points  Quiz 6: 10 multiple choice questions; one attempt; once you start the quiz, you have to complete it; 20 points |
| 10  Oct 19 | **Mid-term exam 2**   1. Once you start the exam, you have to finish the exam 2. You would have **strict three hours** to finish the exam 3. You cannot leave and come back to the exam 4. Exam available **8am on Monday of week 9** and is due at **11:59pm on Thursday of week 9**   Exam is worth 75 points |
| 11  Oct 26 | Introduction to Structured Query Language (SQL) – Data Definition Language  How to build tables  How to insert/modify/delete data  **Assignments due:**  Exercise 7 Problem Solving: **Group Assignment**; unlimited attempts but only last attempt graded; 10 points  Quiz 7: 5 multiple choice questions; one attempt; once you start the quiz, you have to complete it; 15 points |

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| 12  Nov 2 | Introduction to Structured Query Language (SQL): Data Manipulation Language  How to retrieve data using Select queries  How to use different clauses such as Where, Group By, Having, Order By  **Assignments due:**  Exercise 8 Problem Solving: **Group Assignment**; unlimited attempts but only last attempt graded; 10 points  Quiz 8: 10 multiple choice questions; one attempt; once you start the quiz, you have to complete it; 20 points |
| 13  Nov 9 | Advanced SQL: Creating Joins and Views  How to create different types of Joins  How to create and use Views  **Assignments due:**  Exercise 9 Problem Solving: **Group Assignment**; unlimited attempts but only last attempt graded; 10 points  Quiz 9: 5 multiple choice questions; one attempt; once you start the quiz, you have to complete it; 15 points |
| 14  Nov 16 | Advanced SQL: Creating Subqueries and Programming with SQL  How to create different types of Subqueries  How to program with SQL: defining and using variables, case statements, and loops  **Assignments due:**  Exercise 10 Problem Solving: **Group Assignment**; unlimited attempts but only last attempt graded; 10 points  Quiz 10: 10 multiple choice questions; one attempt; once you start the quiz, you have to complete it; 20 points |
| 15  Nov 23 | Catch-up Week  **Assignments due:**  Exercise 11 Problem Solving: **Group Assignment**; unlimited attempts but only last attempt graded; 10 points |
| 16  Nov 30 | **Final Exam**   1. Once you start the exam, you have to finish the exam 2. You would have **strict three hours** to finish the exam 3. You cannot leave and come back to the exam 4. Exam available **8am on Monday of the final exam week** and is due at **11:59pm on Thursday of this final exam week**   Exam is worth 100 points |

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| **V. Additional Procedures and Policies** | |
| **Grading** | The score for each assignment will depend on correctness of assignment logic and output (~ 80%); style - variable names, indenting, output formats, etc., where appropriate (~10%); and documentation where appropriate (~ 10%) |
| **Documentation** | Documentation for each assignment must contain your name, assignment due date, course number and section, and assignment number on a cover sheet. The documentation may also contain a brief description of what the assignment does. For stored procedures and triggers the documentation must include a brief description and a variable dictionary, preconditions, and post-conditions where appropriate. Finally documentation will also include comments which will identify and explain important sections in the code when needed. Any missed documentation item will result in a 1 point deduction per occurrence. Words to live by: When in doubt, document it!!! |
| **Interviews** | The instructor reserves the right to require an interview with the student before assigning a grade for any assignment or test. If the student is unable to adequately explain how the solution works, the student will receive a zero for the assignment regardless of how well it runs. Students may be selected at random or upon suspicion of cheating. Once notified, students have up to one week to schedule an interview. These interviews may be conducted over the phone. |
| **Tests** | Missed tests count as zero (0) points. A make-up test is allowed only if convincing reasons (such as a doctor’s note) are given for the absence. If possible, arrange in advance of test. All tests are closed book and closed notes. Test dates are given in the TENTATIVE Schedule. Any change will be announced as far in advance as possible (usually at least one week). Exceptions will not be granted nor grades of "Incomplete" given except in accordance with applicable University and College of Business and Public Administration policies. |

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| **Changes in the syllabus** | Syllabus is subject to change |

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| **V1. Student Responsibilities / College and University Issues** | |
| **COVID-19 Guidelines** | As a Community of Care, all Cardinals are expected to abide by public health guidelines and regulations as published by the University. For Fall 2020, this includes:   * wearing of cloth/paper masks (covering nose and mouth) when in shared indoor spaces like classrooms, or when appropriate physical distancing cannot be maintained. (Per the Code of Student Conduct, a student who refuses to follow these guidelines may be asked to leave a classroom) * staying home when sick—any UofL community member experiencing fever, consistent dry cough, or other symptoms of contagious disease should remain at home until symptoms subside or advised that it is safe to return by a medical professional. * practicing good hygiene and responsibility for one’s own surrounding. * Cover sneezes and coughs * Wash hands frequently with soap and water when possible, use hand sanitizer when soap and water are not available * Wipe down frequently touched surfaces * Maintain 6 feet physical distancing when possible   Faculty have the responsibility to help students meet these recommendations by:   * allowing for remote participation in class when necessary and practicable * allowing students absent for reason of illness to make up missed work and not penalize students for these absences * not requiring doctor’s notes for absences of less than the equivalent of two weeks of class. If the absences occur on the day of a scheduled assessment, the student may be asked to provide documentation for the absence * Notifying Physical Plant when classrooms are not adequately stocked with cleaning supplies and arranging classroom furniture or seating charts to maximize physical distancing where possible. |
| **University of Louisville student**  **conduct and responsibilities** | This course will abide by University of Louisville student  conduct and responsibilities with regards to ethics and related issues:  <http://louisville.edu/dos/students/policies-procedures/student-handbook.html#codeofstudentconduct> |
| **College of Business student conduct and responsibilities** | This course will abide by College of Business student  conduct and responsibilities with regards to ethics and related issues:  <http://business.louisville.edu/students/college-of-business-academic-dishonesty-policy> |
| **Religious holiday conflict policy** | <http://louisville.edu/diversity/resources/work-restricted-holy-day-policies-calendar.html> |
| **University policy on equal access** | <http://louisville.edu/disability/policies-procedures> |
| **Severe weather** | In case of severe weather classes may be cancelled up to a certain time of day. Please check the U of L website or call the University Information Center (852-5555). You can sign up for UofL Alerts at <http://louisville.edu/alerts> if you wish to receive text messages regarding cancelled or delayed classes. |
| **Classroom policy** | * Use of electronic devices in class: You may use electronic devices in class as long as such use is directly related to the class, does not disrupt normal classroom activities, and does not affect other students. For example you must silence all devices. * You are expected to remain in your seat during the entire session each time the class meets. |

**Title IX/Clery Act Notification**

Sexual misconduct (including sexual harassment, sexual assault, and any other nonconsensual behavior of a sexual nature) and sex discrimination violate University policies.  Students experiencing such behavior may obtain **confidential** supportfrom the PEACC Program (852-2663), Counseling Center (852-6585), and Campus Health Services (852-6479). To report sexual misconduct or sex discrimination, contact the Dean of Students (852-5787) or University of Louisville Police (852-6111).

Disclosure to **University faculty or instructors** of sexual misconduct, domestic violence, dating violence, or sex discrimination occurring on campus, in a University-sponsored program, or involving a campus visitor or University student or employee (whether current or former) is **not confidential** under Title IX. Faculty and instructors must forward such reports, including names and circumstances, to the University’s Title IX officer.

For more information, see the Sexual Misconduct Resource Guide

(<http://louisville.edu/hr/employeerelations/sexual-misconduct-brochure>).