CSE 412: Database Management
Syllabus

COURSE OVERVIEW
Instructor Information
Instructor: Dr. Gennaro De Luca
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Course Overview
This course is deemed as an introduction to the database systems. More importantly, this course will touch upon following topics: database design/modeling, database applications development, data storage and indexing, query processing and optimization, transaction management, database security.

Credits
This is a three-credit course.

Enrollment Requirements:
Course participants should have acquired basic computer science knowledge including: discrete mathematics, data structures and algorithms. Course participants should also have acquired programming experience with a high-level programming language (e.g., C++, Java). It is strongly recommended that course participants have taken and passed CSE 205 and CSE 310.

Course Learning Outcomes
The ultimate goal of this introductory course is to master skills in data modeling and extract information stored in database using existing database management systems. Course participants will learn definitions of terms and understand the DBMS ecosystem. By the end of this course, students should learn the following:
(1) Setup a database on a computer server.
(2) Design and create efficient relational data models that fits the database application needs.
(3) Loading data into database.
(4) Write SQL (and other similar language for accessing, querying and manipulating data) programs to issue queries over the database to read, edit, analyze, and summarize data.
(5) Build applications that access the database to retrieve relevant data and present it to end users.
(6) Understand relational algebra, relational calculus, functional dependency, query execution/optimization/compilation and etc.

Tentative Class Schedule
TBA

COURSE MATERIAL
Required books
During the course, we will mainly use the following textbook: "Database Management Systems" 3rd edition by R. Ramakrishnan and J.Gehrke.

For some contents like functional dependency and algebraic and logical query language and so

on, I would recommend you read several chapters of the following textbook "Database Systems, the Complete Book" 2nd edition by Hector Garcia-Molina, Jeff Ullman, and Jennifer Widom. But this is NOT required.

Required Course Material/Tools
Students are required to have a laptop or desktop computer with the minimum specifications required to run current versions of Microsoft Windows, macOS, or Linux.

COURSE POLICIES
Grading Scheme
Grading scheme is subject to change at instructor's discretion.

Assignments	20%
Group Project	30%
Midterm Exams	20%
Final Exam	25%
Participation (peer-reviews, quizzes, attendance, etc.)	5%

Grade Scale

Grade	A+	A	A-	B+	B	B-	C+	C	D	E
% Upper Limit	100%	< 97.0%	< 94.0%	< 90.0%	< 87.0%	< 84.0%	< 80.0%	< 76.0%	< 70.0%	< 60.0%
% Lower Limit	to 97.0%	to 94.0%	to 90.0%	to 87.0%	to 84.0%	to 80.0%	to 76.0%	to 70.0%	to 60.0%	to 0.0%

Course Policies – Assignments and Grading
Attendance and Participation: It is highly recommended that you attend each class session. When you attend, please arrive on time, attend the full class period, and participate in the class activities. It is totally fine that participants (students) may need to occasionally miss a class session for personal reasons (e.g., religious holiday, family matter). In these situations, the student must contact the instructor to discuss alternative ways to grasp the information presented in the missed class session prior to the class.

Late Submission Policy: The due dates/times for all assignments are presented above on the class schedule. Please note the dates/times carefully because there will be no provision for late submissions, except for extraordinary circumstances. Late submissions will receive no credit.

Makeup Exam Policy: There will be no provision for make-up exams or assignments, except in extraordinary and documented circumstances.

Assignments
Course evaluations will be based on a combination of homework assignments and a final term paper.

- Written Evaluations are based on computational solutions to solve current industry problems.
- Quizzes. While there are two attempts for each quiz, please note that **ONLY** the latest attempt will count toward your grade.
- Class Participation based on class discussion or discussion questions.
- Team project is a research paper that encourages the students to leverage their own academic backgrounds to identify a project relevant to their study/research and determine algorithms (learned in class or building upon concepts learned in the course) that may work in those settings. Understanding and implementing published papers and using public datasets is a big part of this learning process. The research will be conducted in phases where the students will

provide a preliminary research brief report that will be reviewed, and feedback provided by their class members. Students will incorporate the feedback and findings to create the Final Research Paper.

Class Participation

There is an expectation that students will actively engage in discussions. This is their key opportunity to ensure that their understanding of an issue is accurate, but it is also an important opportunity to reinforce the understanding of others through constructive but sometimes critical discussions. This opportunity should not be utilized as a podium for endless chatter and opinions, but for respectful, inclusive, and active discourse.

Campus Resources

These resources can be used by on-campus and online students. There are many valuable resources on campus to help you achieve success both personally and academically. A few of these are listed here which are available on all campuses. You are able to interact with these services remotely:

- Writing centers – https://tutoring.asu.edu/writing-centersLinks to an external site.
- Tutoring, student success centers: https://tutoring.asu.edu/tutoringLinks to an external site.
- Counseling / consultation: https://eoss.asu.edu/counselingLinks to an external site.
- Career services: https://eoss.asu.edu/csLinks to an external site.

Absence & Make-up Policies

Excused absences related to religious observances/practices in accord with ACD 304–04, "Accommodation for Religious Practices." Students may be excused for the observance of religious holidays. Students should notify the instructor at the beginning of the semester about the need to be absent from class due to religious observances. Students will be responsible for materials covered during their absence and should consult with the instructor to arrange reasonable accommodation for missed exams or other required assignments.

Excused absences related to university sanctioned activities in accord with ACD 304–02, "Missed Classes Due to University-Sanctioned Activities." Students required to miss classes due to university sanctioned activities will not be counted absent. However, absence from class or examinations due to university-sanctioned activities does not relieve students from responsibility for any part of the course work required during the period of the absence. Students should inform the instructor early in the semester of upcoming scheduled absences and immediately upon learning of unscheduled required class absences. Reasonable accommodation to make up missed exams or other required assignments will be made. Consult the instructor BEFORE the absence to arrange for this accommodation.

Line-of-duty absence and missed assignment policy: A student who is a member of the National Guard, Reserve, or other U.S. Armed Forces branch who misses classes, assignments or examinations due to line-of-duty responsibilities, shall have the opportunity to make up the coursework in accordance with SSM 20-18 Accommodating Active Duty Military Personnel. This accommodation also applies to spouses who are the guardian of minor children during line-of -duty activities. This policy does not excuse students from course responsibilities during their absence. Students should first notify the Pat Tillman Veterans Center of their activation and then the instructor to discuss options.

UNIVERSITY POLICIES

Classroom Behavior

Cell phones and pagers must be turned off during class to avoid causing distractions. The use of recording devices is not permitted during class. Any violent or threatening conduct by an ASU student in this class will be reported to the ASU Police Department and the Office of the Dean of Students. See SSM 104–02Links to an external site., "Handling Disruptive, Threatening, or Violent Individuals on Campus."

Academic Integrity & Copyright Laws

One of the core topics of this course is academic integrity. You will be discussing it further throughout the course. ASU expects and requires all its students to act with honesty and integrity, and respect the rights of others in carrying out all academic assignments. Fulton Schools of Engineering takes academic integrity VERY seriously. The Fulton Honor Code will be discussed during a future class.

Students in this class must adhere to ASU's academic integrity policy, which can be found at https://provost.asu.edu/academic-integrity/policyLinks to an external site.). Students are responsible for reviewing this policy and understanding each of the areas in which academic dishonesty can occur. In addition, all engineering students are expected to adhere to both the ASU Academic Integrity Honor CodeLinks to an external site. and the Fulton Schools of Engineering Honor CodeLinks to an external site.. All academic integrity violations will be reported to the Fulton Schools of Engineering Academic Integrity Office (AIO). The AIO maintains record of all violations and has access to academic integrity violations committed in all other ASU college/schools.
All course content and materials, including lectures (Zoom recorded lectures included), are copyrighted materials and students may not share outside the class, upload to online websites not approved by the instructor, sell, or distribute course content or notes taken during the conduct of the course (see ACD 304–06Links to an external site., "Commercial Note Taking Services" and ABOR Policy 5-308 F.14 (Links to an external site.) for more information).

You must refrain from uploading to any course shell, discussion board, or website used by the course instructor or other course forum, material that is not the student's original work, unless the students first comply with all applicable copyright laws; faculty members reserve the right to delete materials on the grounds of suspected copyright infringement.

Plagiarism

Although ASU encourages collaboration between students, and faculty, in the sharing of ideas and experiences, individual work needs to represent the student's original thought and be distinguishably different from other students' work. Copying from other people's work in part or in whole will result in a ZERO grade for the whole work. Recurring plagiarism will result in obtaining an XE and reporting each student's misconduct.

Threatening Behavior Policy

Students, faculty, staff, and other individuals do not have an unqualified right of access to university grounds, property, or services (see SSM 104-02Links to an external site.). Interfering with the peaceful conduct of university-related business or activities or remaining on campus grounds after a request to leave may be considered a crime. All incidents and allegations of violent or threatening conduct by an ASU student (whether on- or off-campus) must be reported to the ASU Police Department (ASU PD) and the Office of the Dean of Students.

Harassment and Sexual Discrimination

Arizona State University is committed to providing an environment free of discrimination, harassment, or retaliation for the entire university community, including all students, faculty members, staff employees, and guests. ASU expressly prohibits discrimination, harassment, and retaliation by employees, students,

contractors, or agents of the university based on any protected status: race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, and genetic information.

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at https://sexualviolenceprevention.asu.edu/faqsLinks to an external site..

As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence.

ASU Counseling Services, https://eoss.asu.edu/counselingLinks to an external site. is available if you wish to discuss any concerns confidentially and privately.
ASU online students may access 360 Life Services, https://goto.asuonline.asu.edu/success/online-resources.htmlLinks to an external site..

Mandated sexual harassment reporter: As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, https://eoss.asu.edu/counselingLinks to an external site., is available if you wish discuss any concerns confidentially and privately.

Disability Resources

Suitable accommodations will be made for students having disabilities. Students needing accommodations must register with the ASU Disabilities Resource Center and provide documentation of that registration to the instructor. Students should communicate the need for an accommodation in sufficient time for it to be properly arranged. See ACD 304-08Links to an external site. Classroom and Testing Accommodations for Students with Disabilities.

Students who have accommodations for this course are encouraged to communicate with me as soon as possible to make appropriate arrangements.

The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. One element of this legislation requires that all qualified students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities.

If you require accommodation, please contact the Disability Resource Center (DRC) at ASU Polytechnic located in Student Affairs Quad # 4 or call 480-727-1039 / TTY: 480-727-1009. Please note that students who may need accommodations must register with the ASU Disability Resource Center and provide documentation of that registration to the instructor. Eligibility and documentation policies online: http://www.asu.edu/studentaffairs/ed/drc/Links to an external site.

Technical Support

- This course uses Canvas to deliver content. It can be accessed through MyASU at http://my.asu.edu or the Canvas home page at https://myasucourses.asu.edu
- To monitor the status of campus networks and services, visit System Health Portal at http://syshealth.asu.edu/
- To contact the help desk call toll-free at 1-855-278-5080.