

Instructor: Dr. Ching-yu (Austin) Huang

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Office Hours: Monday - Thursday: 10–11 am; 12:20–2:00 pm; 3:20 – 3:40 pm (appointment only)

Class: **Tue, Thur (14:00 - 15:15 pm)**, NAAB Room **208**Prerequisites: **Admission to CIS Graduate Program** Students without prerequisite(s) must withdraw from the class.

Unit		Date	Topic	Reading	Notes	#
1	Tue	9/1/20	Intro of DB, 3-tier arch., setup env., PHP, Linux	E&N: Ch 1	Test eve, DB acct	1
	Thu	9/3/20	Basic SQL, create view, HW 1	E&N: Ch 2, 6	Start HW1	2
2	Tue	9/8/20	Client-server, web DB app, basic SQL, PHP	E&N: 11, PHP: 9,11	Start P1	3
	Thu	9/10/20	Basic SQL, authentication, PHP MySQL, P 1	E&N: 6,30, PHP MySQL		4
3	Tue	9/15/20	Logical design & ER model, Quiz 1	E&N: Ch 3	Quiz 1	5
	Thu	9/17/20	Relational model, case study & constraints	E&N: Ch 5		6
4	Tue	9/22/20	SQL - create, insert, update, delete & PHP, P 1	E&N: Ch 6, PHP MySQL		7
	Thu	9/24/20	FK, change, cascade, alter, workbench	E&N: Ch 7		8
5	Tue	9/29/20	Complex SQL Queries, set, subquery	E&N: Ch 7		9
	Thu	10/1/20	SQL – view & updatable views, Quiz 2	E&N: Ch 7	Quiz 2	10
6	Tue	10/6/20	Relational algebra, relational calculus & SQL	E&N: Ch 8	HW1 due	11
	Thu	10/8/20	SQL variables, SQL programming (PL/SQL)	E&N: Ch 10	Start P 2	12
7	Tue	10/13/20	SQL stored routines (PL/SQL)	E&N: Ch 10	P1 due	13
	Thu	10/15/20	SQL error handling, SQL Triggers	E&N: Ch 10	Start HW 2	14
8	Tue	10/20/20	Personalization, SQL injection, image, Quiz 3		Quiz 3	15
	Thu	10/22/20	Pass, receive & update multiple web items, P2	PHP: 16, 17, 23		16
9	Tue	10/27/20	ERD to tables, functional dependencies	E&N: Ch 9, 14		17
	Thu	10/29/20	Normalization	E&N: Ch 14		18
	Tue	11/3/20	Election		School closed	
10	Thu	11/5/20	Transactions, Quiz 4	E&N: Ch 20	Quiz 4	19
	Tue	11/10/20	Concurrency control	E&N: Ch 21		20
		11/11/20	Last day to withdraw with 'W' grade		0% refund	
11	Thu	11/12/20	Emerging DB – GIS, Google Charts, P2	E&N: Ch 24		21
	Tue	11/17/20	Emerging DB app – JSON & NoSQL	E&N: Ch 24		22
12	Thu	11/19/20	Data mining concepts, data warehousing, OLAP, and data visualization	E&N: Ch 28, 29	HW2 due	23
	Tue	11/24/20	Filesystem, database storage, Quiz 5	E&N: Ch 16	Quiz 5	24
	Thu	11/26/20	Thanksgiving		School closed	
13	Tue	12/1/20	RAID, Indexing, query processing, XAMPP	E&N: Ch 17,18, XAMPP		25
	Thu	12/3/20	Query optimization, SQL performance tuning	E&N: Ch 19	P2 due	26
14	Tue	12/8/20	XAMPP, database administration	E&N: Ch 30		27
	Thu	12/10/20	DB Integrity & Security, review final exam	E&N: Ch 30		28
15	Tue	12/15/20	Final exam		Final exam	29
	Thu	12/17/20	Review final exam answers			30

Late revision: 6/24/2020

- **Content:** Enterprise database management systems; database design; database implementation; storage and indexing; transaction processing concepts; data warehousing, data mining and online analytical processing (OLAP); emerging database applications.
- **Textbook: Fundamentals of Database Systems (7th Edition)**, by Elmasri, R. and Navathe, S., *Pearson*, 2015.
ISBN-13: 9780133970777
- **Objectives:** Upon completion of this course, students will be able to:
 - A. Evaluate the role of databases in enterprise information systems
 - B. Design and build applications using database management systems
 - C. Compare and evaluate diverse database models
 - D. Demonstrate an understanding of the role of a database in data mining and OLAP
 - E. Understand transaction processing concepts
 - F. Understand the emerging database applications
- **Course grading:** 5 quizzes (5x60 pts), Final (200 pts), 2 Homework (2x75 pts), discussions (15x10 pts), 2 projects (100, 100 pts)

Class Policies:

- **This is a hands-on course. Students are required to bring personal laptop every class.**
- Instructional Methods: lecture with slides, student presentations, class discussions and exercises, and project creations.
- **A:** 100-94, **A-:** 93-89, **B+:** 88-84, **B:** 83-80, **B-:** 79-76, **C+:** 75-72, **C:** 71-68, **D:** 67-64, below 64 is (a B- or better is needed for CIS Graduate program.)
- It is students' responsibilities to verify all the scores posted on **the class website** that is announced on the first day of the class.
- **Assignments should be used MySQL connecting through a Linux server that is announced on the first day of the class.**
- Mid-Term Progress information will be provided to students by the instructor via KeanWise.
- No late work will be accepted without permission in advance from the instructor. Late work is penalized.
- No make-up exams are provided without documentation of medical or family emergency. Please arrange your schedule for the next 16 weeks to arrive in class on time and prepared.
- Attendance and participation are required.
- All work turned in under your name must be your own. **No credit will be given for an assignment or homework that is copied – in part or in total – from another person.**
- Exam policy: During class examinations, if a student leaves the classroom for any reason during the exam time, **the exam must be turned in before the student departs, concluding the exam for that student.** The student cannot resume the exam on return later. You may not make or take a phone call, text or access the internet during class or a test.
- **Classes may not be audio or digitally captured**, unless permission has been granted by the instructor for that specific class.
- **Public posting of course materials from this class is prohibited.** Materials presented in the classroom are for the personal use of registered students during the semester only. Homework, programs, and other classwork should not be shared, distributed or publicized in any way, for the protection of other students and in respect of the intellectual property rights of the faculty and copyright owners.

Important University Policies and Information:

- The Kean Academic **Calendar** can be found online at <https://www.kean.edu/offices/registrars-office/academic-calendar>
- **Tutoring and learning Support services:** <http://www.kean.edu/content/tutoring-services>
- Students should review the **Student Code of Conduct**, as it discusses expectations of appropriate conduct in the classroom: <https://www.kean.edu/KU/Code-of-Conduct>
- Students are responsible to review and understand the University Academic Integrity Policy available via the following link: <https://www.kean.edu/academic-integrity>
- Read Kean **Students Rights and Responsibilities** at <https://www.kean.edu/offices/disability-services/rights-and-responsibilities>
- Register for the university's **emergency notification system** at <https://www.kean.edu/offices/university-police-0/campus-alert>
- Students must have a **valid Kean email account**. You can request one at <https://www.kean.edu/~ocisweb/forms.htm>
- **Title IX:** Title IX of the Education Amendments of 1972 (Title IX) prohibit discrimination on the basis of sex in education programs or activities. Sexual harassment in any form will not be tolerated at Kean University. Sexual harassment by students should be reported to the Office of Affirmative Action Programs, Office of the Vice President for Student Affairs or the Office of Community Standards and Student Conduct immediately. Information about the University's Sexual Misconduct Policy may be found at the following: <https://www.kean.edu/offices/policies/sexual-misconduct-policy>
- **Americans with Disabilities Statement & Non-Discrimination Statement:**
Kean University is an affirmative action, equal opportunity institution. Students with documented disabilities who may need special instructional accommodations or who may need special arrangements in the event of an evacuation should notify the instructor as soon as possible, no later than the second week of the term. Students may contact the Office of Disability Services in Downs Hall Room 122 or call 908-737-4910 to discuss special needs.
- **Kean University Non-Discrimination Policy Statement:**
Kean University is an affirmative action, equal opportunity institution.

Syllabus Updates: **Instructor reserve the right to change the syllabus at any time throughout the semester.** All changes will be announced in class and a new syllabus will be electronically available to all students. If you are enrolled in this class past the add/drop date you are subjected to all rules in this syllabus.