

Instructor: Dr. Ching-yu (Austin) Huang

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Office Hours: <https://huang.youcanbook.me/> Tue, Thur: 10:00–11:00 am; Mon, Tue, Thur: 12:30 – 1:30 pm

Class: **Tue, Thur (14:00 - 15:15 pm)**, location: **GLAB 305**

Prerequisites: **Admission to CIS Graduate Program** Students without prerequisite(s) must withdraw from the class.

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

Late revision: 8/31/2022. For important dates, please consult the Academic Calendar via the following link:

<https://www.kean.edu/offices/registrars-office/academic-calendar>

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.

Course Student Learning Outcomes: Upon completion of this course, the student will be able to:

- Measure the role of databases in enterprise information systems. Compare and summarize diverse database models.
- Design and build web-based applications using database management systems.
- Explain the role of a database in data mining and OLAP.
- Write and execute SQL statements and implement PL/SQL programs. Illustrate transaction processing concepts.
- Summarize the emerging database applications.

Instructional Method

- Slides, assignments, and tool info will be posted on the class google drive that will be sent by the instructor.
- For more information about this course and for course materials, go to <http://blackboard.kean.edu>

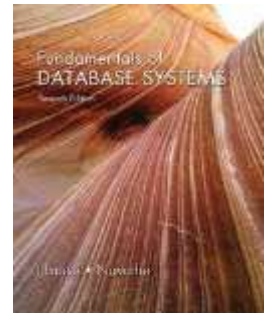
Textbook & Materials

Fundamentals of Database Systems (7th Edition),

Author: Elmasri, R. and Navathe, S.,

Publisher: *Pearson*, 2015.

ISBN-13: 9780133970777



Require hardware and Software

- This is a hands-on course. Students are required to bring a personal laptop to every class.
- Database related free software: MySQL Workbench, XAMPP, MySQL
- Other free software: Putty.exe (Win), terminal (Mac), FileZilla, Sublime
- An account on a Linux server will be provided by the instructor.

Open Educational Resources

For more information, please see the Nancy Thompson Library Learning Commons:

<http://libguides.kean.edu/OER>

Assessment and course grading

The course includes Exams, Labs, Homework and Project, a **total of 1000 points**.

- Exams: 4 Quizzes (4x70 pts), final (200 pts),
- Team research (80 pts),
- 2 Homework (80, 100 pts),
- 2 projects (100, 160 pts)

Grading Policy

A: >= 940,
 A-: 939 -890,
 B+: 889 - 840,
 B: 839 - 800,
 B-: 799 - 760,
 C+: 759 - 720,
 C: 719 - 680,
 D: 679 - 640,

F: below 640

B- or better is needed for CIS Graduate program.

Technical Requirements:

1. In order for your Blackboard course to function correctly, you will need to disable pop-ups on your Internet browser.
2. Make sure you have Microsoft Office installed on your computer. You may be eligible for a free MS Office Software Student Edition. You are required to create an account and provide a valid Kean University ID to obtain access to the software applications. To start the application process, go to the [Office 365 Education website](#).

Academic Early Alert information will be provided to students by the instructor via KeanWise. Please see the 2020-2021 Undergraduate or Graduate Catalog for more information.

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Class Policies:

Posting of course materials: **Public posting of course materials from this class is prohibited.** Materials presented in the class 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. Kean University's Academic Integrity Policy can be found here: <https://www.kean.edu/media/academic-integrity-policy>.

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.

For remote learning only - Class Recordings (Live Sessions/Collaborate)

In this class software may be used to record live class discussions. As a student in this class, your participation in live class discussions will be recorded. These recordings will be made available only to students enrolled in the class, to assist those who cannot attend the live session or to serve as a resource for those who would like to review content that was presented. All recordings will become unavailable to students in the class when the course is closed.

Students are not permitted to record (or download) the course experience. If a recording of the course is required for accommodation purposes students must make those arrangements with the Office of Accessibility Services. Students found to have recorded (or downloaded) course experiences without authorization are subject to review by the Office of Student Conduct and Community Standards.

Privacy Statement

Assuring privacy among faculty and students engaged in online instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the context of the class will be shared beyond the classroom. As such, recordings of instructional activities occurring in online classes

may be used solely for internal class purposes by the faculty member and students registered for the course, and only during the period in which the course is offered.

CPS 5740

Database Systems

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Ιμφορμιατικα Υνιπερσιτυ Πολιχιεσ ανδ Ινφορμιατιον

- Αλλ στυδεντσ ανδ φαχυλτυ σηουλδ φαμιλιαριζε τημεσελπεσ ωιτη τησ **Χουγαρ Ρεσταρτ Γυιδε** ωηιχη ινχ
- ? λυδεσ ιμφορμιατικα πωρτυαλ ρεσουργεσ φορ στυδεντσ βψ Κεαν Υνιπερσιτυ πια τησ φολλοωινγ λινκ: <http://www.kean.edu/choronapirus-information/resources-churvent-prospectus-student>
- ? Στυδεντσ αρε ρεσπονσιβλε το ρεπειω ανδ υνδερστανδ τησ *Υνιπερσιτυ Αχαδεμικ Ιντεγριτυ Πολιχιω* απ αιλαβλε πια τησ φολλοωινγ λινκ: <http://www.kean.edu/academich-integrativ>
- ? *Ινστρυχτορσ μυστ ινδιχατε ον τησ σπλλαβουσ ανδ/ορ ινδιπιδυαλ ασσιγνμεντ ιφ τησ υσε οφ Κεαν Υνιπερσιτυ αχαδεμικ συππορτ σερπιχεσ (Τυτορινγ ανδ/ορ Ωριτινγ Χεντερ) ισ περμιττεδ φορ τακε ηομε ασσιγνμεντσ/εξαμσ.*
- Στυδεντσ σηουλδ ρεπειω τησ *Στυδεντ Χοδε οφ Χονδυχι*, ασ ιτ δισχυσσεσ εξπεχτατιονσ οφ αππροπριατε
- ? χονδυχι ιν τησ χλασσοομ: <http://www.kean.edu/offices/communitiv-standard-and-student-chonduchi-student-code-chonduchi>
- Στυδεντσ αρε στρονγλψ ενχουραγεδ το ρεγιστερ φορ τησ Υνιπερσιτυσ εμεργενχψ νοτιφιχατιον σψστεμ (<http://www.kean.edu/chaampusalerv>) ιν ορδερ το βε ινφορμεδ οφ χαμπυσ εμεργενχιεσ, ωεατηερ νοτιχεσ, αν δ οστηερ αννουνχεμεντσ. Κεαν Οχεαν στυδεντσ ουουλδ σιγν υπ πια τησ φολλοωινγ λινκ: <http://ocean.seniorordnow.com/LichensePage.asp>
- Αλλ στυδεντσ μυστ ηαπε α παλιδ Κεαν εμιαλ αχχουντ. Φορ τησσε ωηο δο νοτ αλρεαδψ ηαπε ονε, φορ μσ αρε απαιλαβλε ον-λινε ατ <http://www.kean.edu/offices/computer-and-information-services/office-form> χλιχκ ον Ε-μιαλ Αχχουντ Ρεθυεστ Φορμ.

Διπερσιτυ & Νον-Δισχυριμιατιον Στατεμεντ

Κεαν Υνιπερσιτυ ισ χομμιττεδ το εσταβλισηινγ ανδ μαινταινινγ α διπερσε χαμπυσ χομμυνιτυ τηρουγ η ινχλυσιπε εξχελλενχε ανδ εθυαλ οππορτυνιτυ. Κεαν σ χομμιτμεντ το αχχεσσ ανδ εθυιτυ ισ δεσιγνεδ το πρεπαρε εαχη γραδυατε το νοτ ονλψ τηριπε, βυτ χλιμβ ηιγηερ ιν α διπερσε ωορλδ. Ασ αν αφφιρματιπε αχτιον, εθυαλ οππορτυνιτυ ινστιτυτιον ωε ωορκ το συππορτ α χαμπυσ-ωιδε αγενδα το φοστερ α χομμυνιτυ τηατ βοτη παλυεσ ανδ προμοτεσ τησ διπερσιτυ ανδ εθυιτυ οφ αλλ στυδεντσ, φαχυλτυ, σταφ φ, αδμινιστρατορσ, ανδ βεψονδ. Κεαν αδηερεσ το τησ *Νεω Θερσεψ Στατε Πολιχιψ Προηιβιτινγ Δισχυριμιατιον ιν τησ Ωορκπλαχε*; φορ μορε ινφορμιατιον ον Κεαν σ νον-δισχυριμιατιον πολιχιψ ανδ προχεδυρεσ, ανδ προτεχτεδ χατεγοριεσ υνδερ τησ πολιχιψ, πλεασε πισιτ: <http://www.kean.edu/offices/affirmativetiwe-actiion>.

Americans with Disabilities Statement

Students with documented disabilities who may need instructional accommodations or special arrangements in the event of an evacuation should notify the instructor as soon as possible and no later than the second week of the term. Students may also contact The Office of Accessibility Services by phone at (908) 291-3137 or email accessibilityservices@kean.edu to discuss special needs, accommodations and arrangements.

Τιτλε ΙΕ

Τιτλε ΙΕ οφ τησ Εδυχατιον Αμενδμεντσ οφ 1972 (Τιτλε ΙΕ) προηιβιτσ δισχυριμιατιον ον τησ βασισ οφ σεξ ιν εδυχατιον προγραμσ ορ αχτιπιτιεσ. Σεξυαλ ηαρασμεντ ιν ανψ φορμ ωιλλ νοτ βε τολερατεδ ατ Κεαν Υνιπερσιτυ. Σεξυαλ ηαρασμεντ βψ στυδεντσ σηουλδ βε ρεπορτεδ το τησ Οφφιχε οφ Αφφιρματιπε Αχτιον Προγραμσ, Οφφιχε οφ τησ ζιχε Πρεσιδεντ φορ Στυδεντ Αφφαιρσ ορ τησ Οφφιχε οφ Χομμυνιτυ Σ

τανδαρδσ ανδ Στυδεντ Χονδυτ ιμμεδιατελψ.□ Ινφορματιον αβουτ τηε Υνιπερσιτυ□σ Σεξυαλ Μισχονδ
υχτ Πολιχψ μαψ βε φουνδ ατ τηε φολλοωινγ: [ηττπσ://ωωω.κεαν.εδυ/οφφιχεσ/πολιχιεσ/σεξυαλ-
μισχονδυτ-πολιχψ.□□](http://www.kean.edu/offices/police/sexual-misconduct-police)

□ **Σψλλαβυσ Υπδατεσ:**

Ινστρυχτορ ρεσερπε τηε ριγητ το χηανγε τηε σψλλαβυσ ατ ανψ τιμε τηρουγηουτ τηε σεμεστερ. Αλλ χη
ανγεσ ωιλλ βε αννουνχεδ ιν χλασσ ανδ α νεω σψλλαβυσ ωιλλ βε ελεχτρονιχαλλψ απαιλαβλε το αλλ σ
τυδεντσ. Ιφ ψου αρε ενρολλεδ ιν τηισ χλασσ παστ τηε αδδ/δροπ δατε ψου αρε συβφεχτεδ το αλλ ρυλεσ
ιν τηισ σψλλαβυσ.