CPS 3740-01/Fall 2020   Database Management Systems   Dr. Huang

Instructor: Dr. Ching-yu (Austin) Huang
Email: chuang@kean.edu   **Website**: http://www.kean.edu/~chuang
Office Hours: https://huang.youcanbook.me/ Tuesday - Thursday: 9:30–10:30 am; 3:30 – 4:30 pm
Class: 01 section: **Tue**, **Thurs** (**11:00 - 12:15 pm**), synchronized ONLINE using Blackboard Live Session
Prerequisites: **CPS 2232**   **Students without prerequisite(s) must withdraw from the class.**

Unit	Date		Topic	Reading	Assignment	
1	9/1/20	Tue	Overview + Database Intro, setup/test	Ch 1, 2	Test eve, DB account	1
	9/3/20	Thur	Basic SQL - select, create view, HW 1	Ch 6	Start HW 1	2
2	9/8/20	Tue	Web, DB, PHP & Linux exercises	Ch 2, 29, PHP	Start P1	3
	9/10/20	Thur	Basic SQL: SELECT, aggregations, join, HW 1	Ch 6		4
3	9/15/20	Tue	Web DB Architectures & CGI, PHP, Quiz #1	Ch 3, 29, PHP	Quiz #1	5
	9/17/20	Thur	Cookie, Web DB programming, PHP MySQL, P 1	PHP, MySQL		6
4	9/22/20	Tue	HTML inputs, SQL Injection, error handlings	Ch 6, 29, PHP		7
	9/24/20	Thur	Basic SQL: DML, set, subquery	Ch 6		8
5	9/29/20	Tue	DML, more joins - natural, outer	Ch 6		9
	10/1/20	Thur	XAMPP – Apache, MySQL Workbench, Quiz #2	XAMPP	Quiz #2	10
6	10/6/20	Tue	XAMPP, SQL insert, update, delete, DCL	Ch 7	HW 1 due	11
	10/8/20	Thur	GIS, Google Maps, images, PHP MySQL	PHP MySQL	**P1 due, Start P 2**	12
7	10/13/20	Tue	Relational Model & Algebra	Ch 4, 5	**Start HW 2**	13
	10/15/20	Thur	SQL DDL, CREATE tables, keys	Ch 7		14
8	10/20/20	Tue	SQL DDL – CREATE view, updatable view, Quiz #3	Ch 7	Quiz #3	15
	10/22/20	Thur	CREATE FK, insert, update, delete, cascade, alter	Ch 7		16
9	10/27/20	Tue	Insert, update, delete in PHP MySQL, P 2	Ch 6, PHP		17
	10/29/20	Thur	Update multiple web items, online order, P 2	PHP MySQL		18
	11/3/20	Tue	<mark>Election</mark>		<mark>School closed</mark>	
10	11/5/20	Thur	Advanced SQL, variables, stored routines	Ch 8		19
	11/10/20	Tue	Stored routines (if, loops), exercise Quiz #4	Ch 8	Quiz #4	20
	11/11/20	Wed	<mark>Last day to withdraw with 'W' grade</mark>		<mark>0% refund</mark>	
11	11/12/20	Thur	DB System Develop. Lifecycle, Conceptual Design	Ch 10, 11		21
	11/17/20	Tue	E-R model & diagram	Ch 12		22
12	11/19/20	Thur	Database design, forms to ERD & ERD to tables	Ch 17, 18		23
	11/24/20	Tue	Case study, database design, Quiz #5	Ch 16	Quiz #5	24
	11/26/20	Thur	<mark>Thanksgiving</mark>		<mark>School closed</mark>	
13	12/1/20	Tue	Anomalies, functional dependency, normalization	Ch 14		25
	12/3/20	Thur	Physical design, HDD vs. SSD, indexing, RAID	Ch 18	HW2 and P2 due	26
14	12/8/20	Tue	Transactions & XAMPP	Ch 22		27
	12/10/20	Thur	Review for final			28
15	12/15/20	Tue	**Final exam**		**Final**	29
	12/17/20	Thur	**Review final exam answers**			30

  Late revision: 8/20/2020

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- **Content**: Fundamental computing and programming concepts; use of systems software; problem solving; design of algorithms using a high-level, object-oriented programming language.
- **Textbook**: <u>Database Systems: A Practical Approach to Design, Implementation, and Management. Author: Thomas Connelly and Carolyn Begg, **6th edition**</u>. Pearson, 2014. **ISBN-13:** 978-0132943260
- **Objectives**: Upon completion of this course, students will be able to:
  - A. Evaluate the role of databases in computing systems
  - B. Design and build applications using database management systems
  - C. Compare and evaluate diverse database models
  - D. Implement a consistent database
  - E. Explain transaction processing concepts
  - F. Explain relational algebra as a basis for database query languages
- **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**: >=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 (C or better is needed for CS and IT majors.)
- 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.
- <u>No late work</u> will be accepted without permission in advance from the instructor. Late work is penalized.
- <u>No make-up exams</u> 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.
- <u>All work turned in under your name must be your own</u>. **No credit will be given for an assignment or homework that is copied – in part or in total – from another person**.
- <u>Exam policy</u>: 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.