

# CSCI 4333.1 Design of Database Systems Fall 2015 (Pre-ACT)

by K. Yue

## 1. General Information

CSCI 4333.1 Class number: 22387 Monday 4:00-6:50pm **Delta 242**

### 1.1 Instructor

Dr. Kwok-Bun Yue, Professor of Computer Science and Computer Information Systems  
Delta 163, 281-283-3864, yue at uhcl.edu; URL: <http://dcm.uhcl.edu/yue/>  
Office hour: M 3-4, T 4:30-6, W 4-6, walk-in or appointment.

### 1.2 Teaching Assistant

To be determined

### 1.3 Laboratory Administrations

You may address account and software problems of the DCM server to the systems administrator, [Ms. Krishani Abeysekera](#).

### 1.4 Other Useful Information

- UHCL emergency hot line (to check weather related closing, for example): 281-283-2221.

### 1.5 Textbooks

Ricardo., Katherine (2011) *Databases Illuminated*, 2nd Edition, Jones & Bartlett, Mississauga, Ontario, Canada.

### 1.6 Course Description

From Catalog: Prerequisite: CSCI 3333. Design of database systems, data description and manipulation languages, data models, entity-relationship model, relational model, SQL, relational algebra, normalization theory, DBMS, Internet, data base design, data flow diagrams and implementation of data base systems. Laboratory instruction.

### 1.8 Student Learning Outcomes (SLO)

After completing the course, the students are expected to be able to

1. Describe the stages of database design, various database architectures and data models.
2. Explain the concept of entity-relationship model, and relational model.
3. Explain the theoretical background of relational database: relational algebra and relational calculus.
4. Implement relational database systems using DBMS, SQL, including both data description and manipulation languages.
5. Explain the importance of normalization of databases, and convert a given relational database into different normal forms.

### 1.8 Prerequisites

The following courses or their equivalent are required:

- CSCI 3333 Data Structures

Languages: The course uses SQL and a high level language. No prior SQL language knowledge is assumed.

### 1.9 Course Format

Traditional lectures, homework and programming assignments.

## 2. Course Policies and Guidelines

### 2.1 General Policies

1. Classroom conduct:
  - You are encouraged to ask a lot of questions in the classroom. Active participation is an essential component in any kind of learning.
  - Be polite to your classmates. Please do not chat with your neighbors during classes.
  - Mobile phones and pagers should be turned off during classes.
  - If you must multi-task, keep it quiet.
2. Assignments:
  - Assignments are due at the beginning of classes. No exception. Assignments turned in after the beginning of classes will be considered as late.
  - Late assignments are accepted with a penalty of *20% deduction* per week day after the due date. No late assignment will be accepted one week after the due date. The last assignment cannot be late.
  - Make sure that you follow the submission guidelines for programming assignments. Failure to do so will result in assignments not graded.
  - For consistency, if you have a dispute in homework or project grading, discuss it with the TA first.
3. Course management:
  - This is a Web-assisted course with no paper class notes. However, this course does not use Blackboard of UHCL.
  - You are encouraged to communicate with me using email. However, I do not respond to anonymous email.
4. Examinations:
  - No make-up exam except in *verified emergencies with immediate notification*.
5. Others:
  - No incomplete grade or administrative withdrawal under nearly all situations.
  - UHCL Information about withdrawals, appeals, GPA, repeated courses, the 6 drop rule, etc. can be found in the general program requirement section: <http://www.uhcl.edu/XDR/Render/catalog/archives/125/06/%23A0110>.
  - Students with disabilities and/or special requirements should discuss their needs with the instructor as soon as possible. See UHCL [Disability Service](#).

### Tips:

1. Check the course Web page regularly. Check the course Website frequently and read the class lectures beforehand.
2. I check email frequently during the week days. Be sure to write a good subject heading for your email so my email filter won't consider it junk and I can relate to it quickly. Check notes on [managing email](#).
3. If you have problems with your accounts, you may want to contact the systems administrator directly by sending them an email and copying it to me. However, do not ask her questions about your homework. Instead, ask me.
4. Software development is *time consuming*. Start early and plan well ahead. Ask a lot of questions.
5. Procrastination usually results in poor grades.
6. If you expect any potential problems, consult me as soon as possible so I may help you.
7. Assignments and examinations will be thrown away one month after the final examination week. Be sure to claim them on time.

## 2.2 Attendance

Students are expected to attend class regularly and actively participate in classroom discussions.

## 2.3 Academic Honesty

Penalty on cheating will be *extremely severe*. Standard academic honesty procedure will be *strictly followed*. Use your best judgment. If you are not sure about certain activities, consult the instructor. See: [http://prtl.uhcl.edu/portal/page/portal/PRV/FORMS\\_POLICY\\_PROCEDURES/STUDENT\\_POLICIES/Academic\\_Honesty\\_Policy](http://prtl.uhcl.edu/portal/page/portal/PRV/FORMS_POLICY_PROCEDURES/STUDENT_POLICIES/Academic_Honesty_Policy)

The [UHCL Academic Honesty Policy](#) will be strictly adhered to. The honesty code section state:

*The Honesty Code is the university community's standard of honesty and is endorsed by all members of the University of Houston-Clear Lake academic community. It is an essential element of the University's academic credibility. It states:*

*I will be honest in all my academic activities and will not tolerate dishonesty.*

Academic honesty is integral to university education. Students are advised to thoroughly understand UHCL academic honesty policy.

## 2.4 Academic Adjustment Policy

The University of Houston System complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for students with a disability. In accordance with Section 504 and ADA guidelines, each University within the System strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please contact your University's student disability services center.

## 2.5 Assessment for Accreditation

The School of Science and Computer Engineering may use assessment tools in this course and other courses for curriculum evaluation. Educational assessment is defined as the systematic collection, interpretation, and use of information about student characteristics, educational environments, learning outcomes, and client satisfaction to improve program effectiveness, student performance, and professional success. This assessment will be related to the learning objectives for each course and individual student performance will be disaggregated relative to these objectives. This disaggregated analysis will not impact student grades, but will provide faculty with detailed information that will be used to improve courses, curriculum, and student performance.

## 3. Grading Policy

Grades will be assigned based *solely* on homework and examination scores. *No other factors will be considered.* In particular, students have requested me to reconsider their grades using the following reasons in the past:

- Expected a higher grade
- Good course participation
- Good improvement during the semester
- Have put in extra efforts
- Need to avoid probation
- Financial needs
- Loss of scholarship
- Loss of job opportunity
- Loss of practical training opportunity
- Need to graduate
- Company relocation
- Immigration status needs
- Family needs
- Sickness during the semester
- and many other.

These requests had all been declined politely but firmly.

There will also be *no* 'special project' that you can work on to improve your grades after the final examination. Anything I offer to one student will be offered to the entire class.

Total score is computed using the following percentages:

Homework: 30%

Mid-Term Exam: 35%

Final Exam: 35%

Last Day to Drop/Withdraw: *November 10, 2014*

### Grade Assignment Table

[92..100]	A
[90..92)	A-
[87..90)	B+
[83..87)	B
[80..83)	B-
[77..80)	C+
[73..77)	C
[70..73)	C-
[67..70)	D+
[63..67)	D
[60..63)	D-
[0..60)	F

## 4. Course Syllabus and Schedule

The syllabus is *tentative*. Actual contents and order of coverage may change. There will be around 9 homework assignments, the actual number is subjected to changes.

<b>Date</b>	<b>Contents</b>	<b>Comments</b>
Week #1: 8/24	Introduction and overview of database systems	Read Ricardo Chapter 1
Week #2: 8/31	An introduction to the relational database model An introduction to simple SQL and Oracle	Read Ricardo 4.1, 4.2.1, 5.1, 5.2, 5.4.1 and 5.4.2
Week #3: 9/7	Labor day	
Week #4: 9/14	Database planning and stages The relational database model	Read Ricardo Chapter 2, 4.2
Week #5: 9/21	An introduction to data model The Entity-Relationship model	Read Ricardo Chapter 3
Week #6: 9/28	The Enhanced ER model Conversion of the ER model to relational schema	Read Ricardo 4.7, 8.1 to 8.6
Week #7: 10/5	Relational algebra and the Tuple-Oriented Relational Calculus	Read Ricardo 4.5
Week #8: 10/12	SQL	Read Ricardo 5.3 to 5.4
Week #9: 10/19	Mid-term examination	
Week #10: 10/26	Advanced SQL and transaction management	Read Ricardo 5.6, 5.7, 10.1, 10.2
Week #11: 11/2	SQL Programming	Read Ricardo 5.5, 5.7, 5.8
Week #12: 11/9	Normal theory and normal forms	Read Ricardo Chapter 6
Week #13:11/16	Databases and the Internet	Read Ricardo Chapter 13
Week #14: 11/23	Advanced topics: to be determined.	
Week #15: 11/30	Advanced topics: to be determined.	
Week #16: 12/7	Final Examination	