**CSC4710: Introduction to Database Management Systems**

***MW 2:30-3:45PM, 131 State Hall, Fall 2017***

## Objective

The goal of the course is to present a basic introduction to database management systems, with an emphasis on database design methodologies (ER diagrams), the relational model, and database query languages (relational algebra and SQL). Students will design and implement a web-based database system to deepen their understanding of the basic database concepts and theories. After taking this course, students will have the capability for developing various database systems such as enterprise information systems, e-commerce web sites, business management systems, and more recently, scientific data management systems.

## Prerequisites

* CSC 2200 and CSC 2201 with grades of C or better

## Instructor:

* [Shiyong Lu](http://www.cs.wayne.edu/%7Eshiyong/) ([shiyong@wayne.edu](mailto:shiyong@cs.wayne.edu) )
* Office: 14102.1 Maccabees Bldg (14th floor)
* Telephone: 577-1667
* Office hours: MW 11:00-12:00PM

## TA's office hours

* Name: Changxin Bai (changxin.bai@wayne.edu)
* Office: Maccabees Bldg 3105
* Office hours: TuTh 11:00-12:00PM

## Course Learning Outcomes

1. Understand the basic concepts of relational database design and development;
2. Learn the ER diagram methodology of database design;
3. Learn SQL programming at the basic level, intermediate level and advanced levels;
4. Being able to develop stand-alone database application using relational database management systems.

## Textbook:

* Database Systems - An Application-Oriented Approach, by Michael Kifer, Arthur Bernstein and Philip M. Lewis, second edition, ISBN: 9780321268457. Addison-Wesley, 2005.

## Course outline:

The objective of the course is that students will learn the concepts of DBMS and apply them to the design of database and the implementation of the course project. This is essential for one to become a successful database programmer or a DBA, and a very important introduction towards studying other higher level database topics like transaction processing systems and big data databases, and pursuing research in the big data field.

A tentative series of lectures are given in the following which is subject to change. The lecture slides are available.

* Ch1: Overview of Databases and Transactions
* Ch2: The Big Picture
* Ch3: The Relational Data Model
* Ch4: Database Design I: the Entity-Relationship Model
* Ch5: Relational Algebra and SQL (107 slides)
* Ch20: An Introduction to XML
* Ch22: An introduction to NOSQL database systems
* Ch7: Triggers and Active Databases (16 slides)
* Ch10: The Basics of Query processing (36 slides)
* Ch11: An overview of query optimization (37 slides)

## Course load and grading

The course will require the following work:

* (30 %) 3 Assignments (around 10/1, 11/1, and 12/1)
* (40 %) One project, part 1 and part 2. Parts 1 and 2 will be graded together for one grade of the final project (around 11/15 and 12/7).
* (30 %) Final exam (2:45-4:45PM, December 13)

All the above work is expected to be done individually except the projects which will be completed by a group of at most two students.

## Feedback policy

If you have any feedback, suggestion, concern, or complaint about any aspect of the class, you should either meet the instructor during his office hours or make an appointment with him to discuss them. You will not discuss them with other students in public either in class or outside the class, even you have a good intention for finding whether your concern is a common concern or not. It is the instructor’s job to find out how many students might have the same concern, not your job. You are only allowed to express your own feedback, concern, suggestion, or complaint, not those of others. The instructor has the final authority for all aspects of the class.

## Office hour policy

Office hours are used for clarification of doubts and confusions. Students should not ask a TA or instructor for an evaluation of their assignment or project and use the informal positive feedback as a promise for good grades. It is not the responsibility of the TA and instructor in their office hours to tell you what parts of your assignment solutions are wrong.

## Late work policy

You can have one late assignment submission up to one week without any penalty. Please write “LATE EXCUSE” indicate on the cover page of your submission when you use your late excuse and no explanation is needed. If a late excuse is not used, a penalty of 10 % per day will be assessed up to one week. No credits will be given for works handed in one week after the due date. The late excuse cannot be used for the last assignment, the last project part, and the final exam due to time constraints.

## Academic honesty policy

All accusations of academic dishonesty must be handled via Section 10 of the Student Code of Conduct. <http://doso.wayne.edu/assets/codeofconduct.pdf>.

## Special need policy

If you have a documented disability that requires accommodations, you will need to register with Student Disability Services for coordination of your academic accommodations.  The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department.  SDS telephone number is [313-577-1851](tel:313-577-1851) or [313-577-3365](tel:313-577-3365) (TTD only).  Once you have your accommodations in place, I will be glad to meet with you privately during my office hours or at another agreed upon time to discuss your needs.  Student Disability Services' mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.