

INLS 523-001

Database Systems I

Spring 2015

Section: Tuesdays and Thursdays, 11:00am – 12:15pm
Manning 307

Instructor: Dr. Robert Capra
Office: Manning 210
Office Hours: Tuesdays, 2:00 – 3:00pm, and by appointment
Email: r<lastname> at unc dot edu

Prerequisite(s): INLS 261 or INLS 461

Textbook: Elmasri, R. & Navathe, S. (2011)
Fundamentals of Database Systems, Sixth Edition,
Addison-Wesley.

Course Webpage: http://www.ils.unc.edu/courses/2015_spring/inls523_001/

NOTE: We will also use a Sakai site for this course.

Grade Weighting:

Quizzes & In-Class Exercises	5%
Homework	35%
Midterm exam	15%
Project	20%
Participation	5%
Final exam	20%

1. Course Description and Prerequisites

From the SILS course description:

INLS 523: Database Systems I: Introduction to Databases (3 credits)
Prerequisite: INLS 261 or INLS 461. Design and implementation of database systems. Semantic modeling, relational database theory, including normalization, query construction, and SQL.

This course will introduce the basic concepts and applications of relational database management systems, including semantic modeling and relational database theory.

- User requirements and specifications
- Semantic data modeling
- Relational model
- SQL
- Normalization and data quality
- Relation topics and emerging technologies

2. Course Objectives

- Develop a general understanding of databases, and specific understanding of the relational database model.
- Gain experience with both the theoretical and practical aspects of database design and implementation.
- Be able to weigh, discuss, and justify database design decisions.
- Learn about concepts involved in database operation
- Gain an understanding of important ideas for databases in the future.

3. Computing Requirements

You will need to use several software packages in this course.

- **SQLite:** For this course, we will use a database system called MariaDB that is hosted on a SILS server. In class, we will discuss options for installing software on your Mac, PC, or Linux computer that will allow you to connect to the SILS MariaDB server to access your database.
- **Diagramming tools:** You will need to use a diagramming tool to create your E/R diagrams and database models. No specific tool is required but I strongly recommend using either Microsoft Visio, or Omnigraffle. Your diagrams must look professional and use good formatting (the ER diagrams in the textbook are good examples). For most students, it is easier to produce professional looking diagrams using tools such as Visio and Omigraffle than it is with Powerpoint.
- **PDF:** You will need the ability to save Word processing files and diagrams as PDF files. Most current word processors support saving to PDF. You will also need a tool such as Acrobat Reader that will allow you to open and view PDF files.
- **In-class exercises:** We will do several in-class exercises that will require computer use. For these exercises, students are expected to bring their laptop computer to class. The dates you will need a computer in-class will be announced in advance.

4. Graded Work

Your grade will be based on quizzes, homework, a project, a midterm exam, and a final exam, and course participation. These will be weighted as shown on the table listed under “Grade Weighting” on the first page.

- **Quizzes & In-class Exercises:** Throughout the semester, there will be a number of quizzes designed to gauge your understanding of course material. There will also be several in-class exercises to give you hands-on experience applying concepts we discuss in class. In-class exercises may include a component that will be turned in as a “quiz”.
- **Homework:** In my experience, developing proficiency in database concepts requires a good deal of practice. As such, in this course, there will be frequent homework assignments designed to give you practice applying the concepts that are discussed in class. Homework assignments are to be completed individually.
- **Database Project:** Later in the semester, students will work (optionally in pairs) to design and implement a database project. Based on provided description of the database requirements, students will create: 1) a completed model and design, and 2) a final implemented database, loaded with data and demonstrated with representative queries.
- **Participation:** Students are expected to regularly attend and participate in class. Throughout the semester, students will be called on in class to answer questions, and to present work from homework assignments, in-class exercises, and quizzes. Your participation grade will be based on regular class attendance, courteous behavior in class, being prepared for class, and being fully and actively engaged during class.
- **Exams:** There will be a mid-term exam and a comprehensive final exam.

5. Grading Policies

The following grade scale will be used AS A GUIDELINE (subject to any curve) for **undergraduate** students:

Grade Range	Definition*
A 90-100%	Mastery of course content at the <u>highest level of attainment</u> that can reasonably be expected of students at a given stage of development. The A grade states clearly that the students have shown such <u>outstanding promise</u> in the aspect of the discipline under study that he/she may be strongly encouraged to continue.
B 80-89.9%	<u>Strong performance</u> demonstrating a high level of attainment for a student at a given stage of development. The B grade states that the student has shown solid promise in the aspect of the discipline under study.
C 70-79.9%	A <u>totally acceptable performance</u> demonstrating an adequate level of attainment for a student at a given stage of development. The C grade states that, while not yet showing unusual promise, the student may continue to study in the discipline with reasonable hope of intellectual development.
D 60-69.9%	A <u>marginal performance</u> in the required exercises demonstrating a minimal passing level of attainment. A student has given no evidence of prospective growth in the discipline; an accumulation of D grades should be taken to mean that the student would be well advised not to continue in the academic field.
F 0-59.9%	For whatever reason, an <u>unacceptable performance</u> . The F grade indicates that the student's performance in the required exercises has revealed almost no understanding of the course content. A grade of F should warrant an advisor's questioning whether the student may suitably register for further study in the discipline before remedial work is undertaken.

* Definitions are from: <http://registrar.unc.edu/academic-services/grades/explanation-of-grading-system/> (underlining is my emphasis)

The following grade scale will be used AS A GUIDELINE (subject to any curve) for **graduate** students:

Grade Range	Definition*
H 95-99%	High Pass
P 80-94.9%	Pass
L 70-79.9%	Low Pass
F 0-69.9%	Fail

* Definitions are from: <http://registrar.unc.edu/academic-services/grades/explanation-of-grading-system/>

These scales will be used as a GUIDELINE ONLY. The final grade scale may differ.

Due Dates and Late Work

Each assignment will have a due date and time and will include instructions for submission. A late penalty of 10% per day will be applied unless prior arrangements have been made with the instructor. Assignments submitted more than 5 days after the due date will receive no credit and will not be graded.

Requests for Extensions and Absences

Any request for an extension must be made, preferably by email, at least 24 hours prior to the due date. Written documentation is required for illness. If a serious illness prevents you from taking any of the tests, send your instructor an e-mail message, or a friend with a note, describing your condition before the scheduled test.

Statute of Limitations

Any questions or complaints regarding the grading of an assignment or test must be raised within one week after the score or graded assignment is made available (not when you pick it up).

6. Course Communication (Website, Listserv, Blackboard)

Course Website

The official course website is at:

http://www.ils.unc.edu/courses/2015_spring/inls523_001/

The website will contain the course syllabus, schedule and other useful information.

Sakai

All enrolled students should have access to the UNC Sakai site for this course:

<http://sakai.unc.edu/>

We will use Sakai for many of the administrative aspects of the course.

- **Course Announcements:** I will often use the Sakai messaging feature to post announcements to the class. Usually these posts will also be sent via email to each student's email address of record. However, it is the responsibility of every student to check the Sakai site regularly for announcements and messages. The Sakai site is a reliable source for announcements and

messages from the instructor. If something the instructor says in class conflicts with information posted by the instructor on Sakai, then the information posted on by the instructor on Sakai takes precedence. Verbal instructions are easily mis-interpreted, and they do not leave a documentation trail.

- **Assignments:** In order for you to receive credit for an assignment, it must be submitted using the Sakai “Assignments” section. In my experience, Sakai is a reliable method to submit assignments. It is the responsibility of each student to make sure they have access to Sakai and can submit assignments when they are due. You should also verify that each assignment you submit has uploaded correctly.
If for some reason you are unable to submit an assignment to Sakai, as a last resort you may email it to the instructor along with a note about the problem you encountered. Then, as soon as you are able to, it is your responsibility to submit the exact same assignment to Sakai. The email serves as a record that you tried to submit the assignment on time, but to receive credit, your assignment must be uploaded to Sakai.
- **Grades:** I will use the Sakai “Gradebook” to record your course grades.

Email

Email can be an effective means for you to contact me regarding quick and simple class-related communication. If you have a detailed question about an assignment or class concept, I encourage you to stop by my office during office hours (or schedule a time to meet with me). Note that I receive a large amount of email and while I try to reply to student emails within 24 hours, there are times that it may take me 2-3 days to reply to email. You may get an answer faster by seeing me in person – in addition to my office hours, I am typically available for a few minutes before and after class.

7. Honor Code

The UNC Honor Code is in effect for all work in this course. The “Instrument of Student Judicial Governance” gives examples of actions that constitute academic dishonesty:

<http://instrument.unc.edu/instrument.text.html#academicdishonesty>

Students often ask what is okay to talk about with other students and what is not. I do encourage you to help each other learn the course material – your fellow students can often be a great resource for learning. However, you should not discuss the details of a solution to an assignment with other students, and should never copy or share answers for an assignment with other students. It is okay to talk about course material with other students, but you should not discuss detailed solutions to pending assignments. **All work you submit should be your own.** One way to help insure this is that if you do discuss course material with other students, do not take any written notes.

8. Special Accommodations

If any student needs special accommodations, please contact the instructor during the first week of classes.