

BCIS 5420 – Foundations of Database Management Systems

CLASS TIME: 6:30 - 9:20 pm, Mondays
CLASSROOM: Gate 049 & FRSC 112
INSTRUCTOR: Dipak P Pravin, PhD
OFFICE: BLB 367A
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E-mail subject line Prefix: 5420:F19 <your topic>
Text for urgent situations (716-830-6129): Use prefix: 5420:your name
OFFICE HOURS: Mondays 5:00 pm to 6:00 pm and by appointment.
Tutor : TBA
Tutor HOURS: TBA:

COURSE DESCRIPTION

Introduction to database and database management systems technology within the framework of a business environment. Topics include the study of analysis, design, development and implementation of database-oriented file organizations in business applications.

COURSE OBJECTIVES

This course is an introduction to database design in a corporate environment. Its primary focus is on the technical and management issues of database technology. The student will analyze, design, develop, and implement a database-oriented business application. Upon completion of the course, the student should be able to define, load, and navigate a GUI database application.

COURSE FORMAT

Although the course is a graduate level class for all majors, it is part of the BCIS Master of Science program. Consequently, it will be an intensive learning experience. The students in this class will be knowledgeable, inquisitive, persevering, and highly self-motivated. Thus, the knowledge gained will be limited only by the efforts put forth by the individual. Students will receive outside assignments in terms of reading material and computer work. Direction will be given on all outside work. However, it is the student's responsibility to determine their level of understanding of the assignments, ask for additional clarification and amplification when necessary, and complete that work in a timely manner. Students are responsible for all reading assignments, whether directly addressed in class or not.

TEXTBOOKS AND OTHER READING MATERIALS

- Hoffer, Jeffery A., Remesh, V., and Topi, Heikki., *Modern Database Management*, 12th ed., Pearson, 2016. ISBN: 9780133544619
- The book may be available as eTextbook; please check www.coursesmart.com
- <https://www.tutorialspoint.com/mongodb/>
- <https://www.mongodb.com/download-center/community>
- <https://tutorialzine.com/2016/01/learn-sql-in-20-minutes> This site allow you to run some SQL queries that you can write at the site.
- <https://www.geeksforgeeks.org/sql-where-clause/> This site has given a number simpler examples for different options for SELECT statement.

LAPTOP REQUIRED

During the later part of this course, students will be doing programming assignments in the class, so if this an issue, please discuss with the instructor.

CLASS LEARNING MANAGEMENT SITE

The course utilizes Canvas (<https://canvas.unt.edu>) for communication between the instructor and students and among students. Be sure to check the course site regularly for the latest announcements and assignments as well as your grades.

TUTORS

Specialized tutorial assistance will be provided for students registered in this class. The location, date, and times for this service will be announced in class and also on the website. The tutor's primary responsibility is debugging assistance. Each student is responsible for the successful completion of all assignments. The tutor is NOT responsible for incorrect interpretations of assignment instructions. The tutor is NOT to do the assignments for you.

ASSIGNMENTS:

All assignments are designed to provide an environment to practice and refine your programming development and debugging skills. As such, they require application of **all** programming and system knowledge gained in the previous courses. From experience with previous students, these assignments are extremely difficult to complete with any level of proficiency if started late and rushed. As assignments, they are an integral part of the learning process required to master course material. Assignments should be started **AS SOON AS POSSIBLE, AND FINISHED BEFORE THEY ARE DUE**. Exams will cover material from lectures, reading assignments, and skills learned from the computer assignments. Failure to complete an assignment will be detrimental to your grade on the project as well as on the quiz.

GROUP PRESENTATION

Students will form a team of 2 members and will select and present an article that relates to some aspects of databases/data management/data analytics... There are many sources you may choose from. CIO Magazine, Wired, and InformationWeek are examples. You should prepare a PowerPoint Presentation that lasts around 10 minutes that summarizes the article. Each team will be allocated a time slot during class to make the presentation. Both members of the team must participate in the presentation. The team should submit a legible softcopy of the article together with the PowerPoint Slides to the instructor at least 24 hours before the scheduled presentation time.

DATABASE PROJECT

As a part of the class you will work to design a simple database system using Oracle and other approved development tools. The project is designed to provide you with realistic experience in systems analysis and design and is expected to be a very time consuming component of the course. More details about the project requirement will be posted soon on Blackboard.

CLASS SCHEDULE

| Date | Topics and Readings | Deliverables |
|-------|--|---|
| 8/26 | Course overview / self-introductions / chit-chat... | One blank sheet of paper. |
| 9/02 | Labor Day | No Class |
| 9/09 | Ch.1: The Database Environment and Development Process | Assignment 1 Available |
| 9/16 | Ch.2: Data Modeling in Organizations | |
| 9/23 | Ch. 3: Enhanced E-R Modeling | Team presentations |
| 9/30 | Ch.6: Introduction to SQL & Oracle | Assignment 1 due Assignment-2 and Project available. |
| 10/7 | Ch 6: SQL Queries In-Depth, In-Class Exercises. | |
| 10/14 | Midterm Exam (Ch. 1 – 3, 6) 6:30 – 8:30 pm | |
| 10/21 | Ch.4: Logical Database Design and the Relational Model Ch.5: Physical Database Design and Performance | Assignment 2 due Team presentations Assignment 3 Available |
| 10/28 | Ch.7: Advanced SQL | Team presentations Project part 1 due |
| 11/04 | Ch 11: An Introduction to NoSQL Databases | Assignment 3 due Team presentations Assignment 4 Available |
| 11/11 | Mongo DB Introduction | No Team Presentations |
| 11/18 | Using Mongo DB Part-I | Team presentations |
| 11/25 | Using Mogo DB Part-II | No Team presentations |
| 12/02 | Review | Team presentations Assignment 4 due |
| 12/09 | Final Exam (Ch. 4, 5, 6, 7, 11, NoSQL & Mongo DB) 6:30 – 8:30 pm | Project complete folder due |

GRADING

Point Distribution

| Component | Points |
|---|------------|
| Midterm exam | 100 |
| Final exam | 150 |
| 4 assignments (30 points each) | 120 |
| Team presentation (30 points) | 30 |
| Database Project part 1 (Team) | 50 |
| Database Project Complete Folder (Team) | 50 |
| Total | 500 |

Grading Scale

| Percent | Grade |
|----------------|-------|
| 90.0 – 100 % | A |
| 80.0 – 89.9 % | B |
| 70.0 – 79.9 % | C |
| 60.0 – 69.9 % | D |
| Less than 60 % | F |

ATTENDANCE AND CLASS PARTICIPATION

Regular and punctual attendance for the full class period is expected. You must attend the entire class to avoid being recorded absent. Any student whose absences exceed the equivalent of two weeks of the class without proper notice may be dropped by the instructor with a WF for nonattendance.

You are expected to come to class prepared. That means you will need to read the assigned chapters before coming to class and be prepared to discuss them.

CODE OF CONDUCT AND ETHICS

Consult the University of North Texas *Student Handbook* (www.unt.edu/student/code.htm) for guidelines and policies regarding student academic conduct.

Scholastic integrity *must* be exhibited in your academic work, conduct, and methods. Course work for which you receive an individual grade *must* be your original, individual effort. If any evidence of copying, cheating, or any other form of academic dishonesty on all or part of any of your graded course work, you (and any others involved) will be given a zero for that work. A second incident will result in a grade of F in this course and a recommendation for further action by the Dean of Students.

STUDENTS WITH DISABILITIES

The College of Business Administration complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disability. If you have an established disability as defined in the Americans with Disabilities Act and would like to request accommodation, please see your instructor as soon as possible.

The instructor reserves the right to make any revision to the Syllabus during the semester.