Data Management and Database Design
INFO 6210, Spring 2020
Instructor: Chaiyaporn Mutsalklisana
Office Hour: Before Class, or By Appointment
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Phone: (949) 735-4172
Class Time: TBD 6:00PM-9:30PM, TBD

Required Text: *(More information on the first lecture)*

1. *Business Intelligence Guidebook*, by Rick Sherman,1st edition, Morgan Kaufmann (ISBN-13: 978-0124114616)
2. *Modern Database Management,* by Hoffer, Ramesh, and Topi, 10th edition, Prentice Hall (ISBN: 0-13-608839-2).

Recommended Text: *(Some reading materials will be provided via pdf files)*

1. *Beginning Database Design: From Novice to Professional by* Clare Churcher, 1st edition, Apress (ISBN: 1-590-59769-9)
2. *Beginning SQL,* by Wilton and Colby, 1st edition, Wrox (ISBN:0-764-57732-8)
3. *Beginning Database Design Solutions,* by Stephens, 1st edition, Wrox (ISBN: 0-470-38549-9)

Course Description:

Data Management and Database Design is a graduate level course that focus on mastering the fundamental skills in designing and developing efficient databases, identify issues and to allow query of data to extract significant information.

Course Objectives:

1. Understand Basic Relational Database modeling concepts and latest technologies and trends
2. Understand the function of Database Management Systems (DBMS) and its roles within applications
3. Understand the differences and usage of other database systems (e.g., structured versus unstructured (Hadoop, NoSQL), row based versus column based (Columnar), etc.)
4. Learn to apply various database normalization techniques
5. Demonstrate knowledge and practical proficiency with the ETL process, using it to extract
6. Develop and display critical thinking and analytical skills through oral presentations
7. Develop skills in identify database requirements that meet users' needs
8. Learn how to read and write SQL script and avoid common database design mistakes
9. Learn how to build data models using variety of modeling techniques

Prerequisite:

This class assumes no prior database experience. Some programming experience is helpful but is not required. Comfort with computers, desktop tools and general computing concepts are expected.

Grading: (TBD)

Assignments 10%
Quizzes 10%
Midterm Exams 25%
Final Exam 20%
Final Project 35%

Academic Honesty:

The Northeastern University academic integrity policy applies to your work in this course. All students are expected to adhere to this policy. For more information on academic integrity policy, please visit website: http://www.northeastern.edu/osccr/academicintegrity/index.html

Facilitating academic dishonesty – Examples may include inaccurately listing someone as co-author of paper who did not contribute, sharing a take-home exam, or taking an exam or writing a paper for another student.

Attendance policy

The Information Systems Department has a strict class attendance policy. Students who miss two or more classes will automatically receive one letter grade lower in their final grade. Students who miss three classes will receive an automatic F for the class. No exceptions are allowed for this rule.

Final Team Project:

The final projects will be completed by a team of 4-5 students (if desired and competent, you can be in a group of 1-3). The project details will be provided during the second/third week of the course. Students are encouraged to choose their topic of choice either from healthcare, business, and/or technology related fields. Details on project deliverable requirement will be specified at a later time.

Course Schedule: (Subject to change)

Week 1	**Introduction** **Administrative and Course Information** **Group Pairing and Ice Breaker Exercises**
Week 2	**SW Setup Session** **Database Project Discussion**
Week 3	**Entity Relation Model**
Week 4	**Normalization** **1NF, 2NF, 3NF and BCNF**
Week 5	**SQL DDL/DML/DCL** **Functions**
Week 6	**JOINS**
Week 7	**Quiz**
Week 8	**Queries and Subqueries** **Back-ups** **User Privileges**
Week 9	**Midterm Exam**
Week 10	**Transaction** **STORE procedures**
Week 11	**Triggers** **VIEWS**
Week 12	**Data Mining in DBMS** **BI Tools**
Week 13	**Project Presentation**
Week 14	**Final Exam**

Key Dates & Holiday this semester:
TBD – Final Exam