Welcome

Welcome to:

CSCI3287 Database Systems

Instructor:

Alan Paradise
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Agenda

1. Introductions

2. Overview of Course (Syllabus)

Syllabus

Course Information

Semester:	Spring 2019
Credit:	3 CREDITS
Dates:	Monday, January 14, 2019 through Wednesday, May 1, 2019
Lectures:	MWF, 3:00 – 3:50 p.m., HUMN room 150
Readings:	Various articles, chapters, videos posted in each week's materials.

Syllabus

Course Information

Text: *Case Studies for Systems Analysis and Design*, *Preliminary Edition*, by Alan Paradise, Cognella Publishing, 2019

ISBN = 978-1-5165-9105-3

Ordering Instructions:

Follow this link: https://store.cognella.com/82703-1a-001

Introductions

Instructor Background

- 37 years as an IT professional
- 35 years as an adjunct instructor at several universities

- Database experience (since 2000)

  DBA Group Manager at Anheuser-Busch in St. Louis

  DBA Manager at Mercy Health in St. Louis

  Director of Database Administration at Wiland in Niwot, CO

  Oracle, MS SQL Server, MySQL (MariaDB)

Scope of This Course:

Focused on “marketable skills” as seen by Hiring Managers

Instructor Information

Name:	Alan Paradise
Email:	alan.paradise@colorado.edu
Office Location:	ECOT 520
Office Hours:	By appointment via email
	Days/Times TBD

Syllabus

Moodle

- http://moodle.cs.colorado.edu/
- CSCI3287 Data Systems
- Enrollment key: 3287
- Enroll yourself once you receive my email invite
- Use the Piazza forum for announcements, questions

- Moodle provides all necessary information and materials week-by-week
  - Reading assignments
  - Homework/project assignments
  - Assignment submission links
  - Lecture slides
  - Grades
  - Exams

Syllabus

Topics

- The Relational Model
- Database design using normalization with data modeling using relationship diagrams
- SQL (Structured Query Language)
- Business Intelligence and Data Analytics using the “Data Warehouse”
- DBMS software fundamentals including security, logging, backup/recovery, transaction processing, concurrency & locking
- The role of the DBA (database administrator), Careers in “data”
- Database server architecture
- Managing query and DBMS software performance
- The explosion of “Big data”
- NOSQL databases as a solution for Big Data
- Hadoop as a solution for Big Data

Syllabus

Course Objectives

- Define, describe, and explain fundamental database concepts
- Demonstrate understanding of the relational model for database design
- Exhibit ability to document relational database requirements and design using data models depicted in entity relationship diagrams
- Design databases normalized to third normal form
- Create, query, and manipulate relational databases using SQL (structured query language)
- Understand and describe the concept of Business Intelligence
- Exhibit understanding of the Data Warehouse and how Data Warehouse design differs from transactional database systems.
- Comprehend and describe the role of the DBA (database administrator)
- Understand the fundamental processes of relational DBMS software in terms of transaction processing, logging, backup/recovery, concurrency & locking
- Grasp the concepts of BigData, NoSQL and Hadoop as relatively recent industry trends in data systems

Syllabus - Grading

Component	%
Homework Assignments	
Six Assignments. Points Vary.	**800**
Exams	
First Mid-Term Exam	**100**
Second Mid-term Exam	**100**
TOTAL	**1000**

Letter Grade Scale
93 to 100 = A
90 to 92 = A-
87 to 89 = B+
83 to 86 = B
80 to 82 = B-
77 to 79 = C+
73 to 76 = C
70 to 72 = C-
60 to 69 = D
< 60 = F

Late Submissions

You can receive a three-day extension on any assignment for a 20% grade penalty for that assignment.

At the end of the third day after the due date, your assignment is considered past due and cannot be turned in.

In the event of a documented personal, family, or medical emergency, consult the instructor about receiving a penalty free extension.

Homework and Project Assignments:

Assignment 1 – An exercise in normalization

Assignment 2 – A "SQL" programming lab exercise

Assignment 3 – Practice Database Design through Data Modeling using a Data Modeling Software Tool

Assignment 4 – Create and Load a Data Warehouse and run some analytical queries against it.

Assignment 5 – Design and Create a Database for a detailed "Case Study" describing a fictitious small business

Assignment 6 – NoSQL Lab using MongoDB

A note on database environments:

The VM (Virtual Machine) is a “server” that runs under your PC’s operating system. Your VM will run a version of Linux. Your interface with your VM is through a “command shell” window.

The VM software allocates PC resources to your VM (memory, disk, CPU, network connectivity.)

For much of our database work, you must install and use MySQL DBMS software on your VM.

We will also install and use MongoDB on your VM. The MongoDB project includes Interview Grading.

Understand your "Why"

Why am I here?

Why are you here?

Final Thoughts

"He who has a WHY to live for can bear almost any HOW."

- Friedrich Nietzsche

Simon Sinek:

"You don't hire for skills, you hire for attitude. You can always teach skills."

"Great companies don't hire skilled people and motivate them, they hire already motivated people and inspire them."

"People don't buy what you do; they buy why you do it. And what you do simply proves what you believe."

- Check out: https://www.youtube.com/watch?v=u4ZoJKF_VuA