COURSE SYLLABUS
COM332: Database Design & Administration

Course Description

In the world of IT, data is king. One of the biggest problems in the industry today is inadequately designed databases including improperly normalized tables. In this course you will design and normalize relational databases for efficiency and optimal performance. The duties and responsibilities of the database administrator are covered in depth along with tools used to accomplish those tasks.

General Course Information

Number of Units/Weeks	4/10
#Hours Lecture/#Hours Laboratory/#Hours Homework	40/00/80
Prerequisite(s)	None
Co-requisites (s)	None
Course Developer(s)	John Wyatt, BS-IS, MBA-TM
Date Approved / Last Review	Oct 2017 / Feb 2018

Learning Outcomes

Upon completion of this course the graduate will:

- (CLO1) Design a relational database that is fully normalized and optimized for efficient queries with support for scalability.
- (CLO2) Insure that the design of a relational database provides for ease of maintenance, updating and repair.
- (CLO3) Implement the data security plan by granting appropriate access to defined user groups.
- (CLO4) Maintain a database and the server(s) on which it runs through interpretation of error logs and diagnostic messages.

Instructional Methods Employed in this Course

- Lecture and reading assignments
- Hands-on exercises and labs
- Research
- Student presentations
- Practical application of theory and skills in authentic projects
- Build on prior knowledge and experience of students to enhance richness of class activities

Information Resources for this Course

📖 **Textbook**

Murach, Joel (2015). Murach's MySQL (2nd Ed). USA: Mike Murach and Associates, Inc. ISBN: 978-890774-82-0
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📁 **Other Materials**

Linux Sandbox account (obtained from Coleman I.T. dept).
    Includes access to PHPMyAdmin.

World Database
    (example database provided by Oracle corporation)
    https://dev.mysql.com/doc/index-other.html

MySQL Workbench (*optional*, for use on student's own computer).
Download from
    https://dev.mysql.com/downloads/

✎ **Drawing tools**

MS Visio or equivalent (for Chen and Crow's Foot diagrams)

📁 **Recommended Readings**

Paul DuBois, Stefan Hinz, Carsten Pedersen (2006).
MySQL 5.0 Certification Study Guide
MySQL Press, Indianapolis, IN. ISBN-13: 978-0672328

🖱 **Web Site Readings**

MySQL Official Documentation:
    https://dev.mysql.com/doc/

W3 Schools SQL Tutorial
    https://www.w3schools.com/sql/

MySQL Tutorial (includes stored procedures and administration)
    http://www.mysqltutorial.org/

Table/Topics & Assignments
Types of Assignments:
Lecture -
Considered Lecture Hours

Classroom Discussion -
Considered Lecture Hours
In Class Critique -
Considered Lecture Hours
Delivering Oral Presentations -
Considered Lecture Hours
In Class (IC) Exercise -
Considered Lecture Hours
Reading -
Considered Homework (HW), work done outside of class
WebClass lesson (non-online courses) -
Considered HW, work done outside of class
Lab Work -
Considered Lab Hours
Quiz, Midterm or Final -
Considered Lecture Hours

Week 1						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 1A	Introduction to Client/Server concepts. Using functions	3				
IC EX 1A	In class exercise - installation and setup of MySQL	1				
HW 1A	Read chapter 2 (30 pgs) Read chapter 9 (36 pgs)			6.6		
HW 1B	Project 1			2	60	Week 2
Total Week 1		4	0	8.6	60	
Week 2						
Type	**Topic/Description**	**LEC Hours**	**LAB Hours**	**HW Hours**	**Point Value**	**Due**
LEC 2A	Database Design	3				
IC EX 2A	In class exercise: Chen & Crow's Foot diagrams	1				
HW 2A	Read chapter 10 (36 pgs)			3.6		

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
HW 2B	Project 2			5	60	Week 3
Total Week 2		4	0	8.6	60	

Week 3

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 3A	Creating databases and tables	3				
IC EX 3A	In class exercise	1				
HW 3A	Read chapters 11 & 5 (60 pgs)			6		
HW 3B	Project 3			3	60	Week 4
HW 3C	Final Project, Part 1 (ERD)			2	30	Week 4
Total Week 3		4	0	11	90	

Week 4

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 4A	Creating Views	3				
IC EX 4A	In class exercise	1				
HW 4A	Read chapters 12 & 6 (38 pgs)			3.8		
HW 4B	Project 4			5	60	Week 5
Total Week 4		4	0	8.8	60	

Week 5

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 5A	Review	1				
IC EX 5A	In class exercise	1				
Exam 5A	Mid-Term	2			150	Week 5
HW 5A	Read Chapter 8 (26 pgs)			2.6		
HW 5B	Project 5			5	60	Week 6
Total Week 5		4	0	7.6	210	

Week 6

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 6A	Stored Programs, Transactions and	3				

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
	Locking.					
IC EX 6A	In class exercise	1				
HW 6A	Read chapters 13 & 14 (42 pgs)			4.2		
HW 6B	Project 6			3	60	Week 7
HW 6C	Final Project, Part 2 (CREATE tables)			3	30	Week 7
Total Week 6		4	0	10.2	90	

Week 7

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 7A	Stored Procedures, Functions, and Triggers	3				
IC EX 7A	In class exercise	1				
HW 7A	Read chapters 15 & 16 (46 pgs)			4.6		
HW 7B	Project 7			6	60	Week 8
Total Week 7		4	0	10.6	60	

Week 8

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 8A	Database Admin	3				
IC EX 8A	In class exercise	1				
HW 8A	Read chapters 17 & 18 (66 pgs)			6.6		
HW 8B	Project 8			2	60	Week 9
HW 8C	Final Project, Part 3 (Referential Integrity)			2	40	Week 9
Total Week 8		4	0	10.6	60	

Week 9

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 9A	Database Backup and Restore	2				
IC EX 9A	In class exercise	2				
HW 9A	Read chapter 19 (32 pgs)			3.2		
HW 9B	Project 9			5	60	Week 10

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
Total Week 9		4	0	8.2	60	

Type	Topic/Description	LEC Hours	LAB Hours	HW Hours	Point Value	Due
LEC 10A	Review	2				
Final Exam		2			150	
HW 10A	Final Project. CL01, CL02, CL03, CL04				60	
Total Week 10			0	0	310	

Course Hours Summary

Week	Topic	LEC Hours	LAB Hours	HW Hours
1	Introduction to Client/Server concepts and Functions	4	0	8.6
2	Database Design	4	0	8.6
3	Creating Databases and Tables	4	0	11
4	Creating Views	4	0	8.8
5	Review & Midterm	4	0	7.6
6	Stored Programs, Transactions and Locking.	4	0	10.2
7	Stored Procedures, Functions, and Triggers	4	0	10.6
8	Database Admin	4	0	10.6
9	Database Backup and Restore	4	0	8.2
10	Review & Final	4	0	0
Total		40	0	84.2

Table/Point Breakdown

Week	Assignment	Possible Points	Percent of Grade
1	Project 1	60	6%
2	Project 2	60	6%
3	Project 3	60	6%
3	Final Project, Part 1	30	3%
4	Project 4	60	6%
5	Midterm Exam	150	15%
5	Project 5	60	6%
6	Project 6	60	6%
6	Final Project, Part 2	30	3%
7	Project 7	60	6%
8	Project 8	60	6%
8	Final Project, Part 3	40	4%
9	Project 9	60	6%

10	Final Exam	150	15%
10	Final Project, Part 4	60	6%
	Participation		
Total		1000	100%

Your Grades for this Course

Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity.

Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows:

Coleman University Grade Assignment Policy:
The Coleman University guidelines for the assignment of grades to total points earned is as follows:

Percent	Letter Grade	Grade Points
94-100	A	4.0
90-93	A-	3.67
87-89	B+	3.33
84-86	B	3.0
80-83	B-	2.67
77-79	C+	2.33
74-76	C	2.00
70-73	C-	1.67
67-69	D+	1.33
64-66	D	1.00
60-63	D-	0.67
N/A	INC	0
N/A	W	0
60 or above	CR	0
59 or below	NC	0
70 or above	PASS	0

Requirements

Assignments: All assignments (including projects, lab work, quizzes and exams) must be completed as scheduled. The following will apply to late assignments:

- 1-24 hours after due date = 20% off point value
- 25-48 hours after due date = 60% off point value
- 49+ hours after due date = No points given

If an assignment equals less than 5 points, no points will be given for late work. If there are extenuating circumstances, the student must submit a written explanation to the department Senior Instructor. Upon evaluation, points will be given according to the Senior Instructor's discretion.

Coleman University Policy on Academic Dishonesty:

Academic dishonesty is cause for dismissal from Coleman University. Presenting another person's ideas, methods, course work, or test answers with the intention that they be taken as one's own is theft of a special kind. It defrauds the originator of the work, the institution, its graduates, its students, and its future students.

The student has full responsibility for the authenticity of all academic work and examinations submitted. A student who appears to have violated this policy must submit to a hearing with the reporting instructor and the associate dean. If it is determined that a violation occurred, the matter will be referred to an Officer of the University with recommendations for an appropriate penalty. The student may be dismissed, suspended, or given another penalty.

Coleman University employs the plagiarism software known as Turnitin. Students are expected to use this tool in an appropriate manner with the sole purpose to support their own academic endeavors at Coleman University. Turnitin account information can not be shared with anyone. Contact your instructor if you have any questions about plagiarism related issues.

Academic Accommodation / Adjustment Policy:

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966-3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA

Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.

After the academic accommodations have been determined, the students' instructors will be notified by the ADA Coordinator. If any problems or concerns regarding the provision of accommodations occur, the student must inform the ADA Coordinator. If the student feels accommodation is not being made appropriately, the student may follow the published Student Grievance Procedures.