DAX511 Database Design and Data Modeling
(3 credit hours)
Course Syllabus

Course Description

This course will investigate principles and practices of database management and design. Students will compare and contrast relational database design, normalization, SQL queries, reports and other interfaces to database data, and documentation. Examination of public sources of data will lead to the practice of applying data sources in real-world examples. This course will utilize spreadsheet (i.e., Microsoft Excel) and database (i.e., Microsoft Access) technology currently used in organizations by applying functions in key field areas such as pivot tables, charts, queries, reports, macros, data load utilities, records and modules.

Course Learning Outcomes

By the end of this course, you will be able to:

1. Identify and utilize data from internal and external database sources.

2. Analyze major components of the relational database modeling to database design.

3. Investigate and assess database and spreadsheet software to develop database applications, data models and queries.

Prerequisites/Corequisites

MGT526 or Equivalent

Required Textbook(s) and Resources

Evergreen, S.D.H. (2019). *Effective Data Visualization: The Right Chart for the Right Data*, Second Edition. Sage Publications.

Huff, D. (1993). *How to lie with statistics*. New York, NY: W.W. Norton and Company, Inc.

Be sure to also review the weekly **Explore** sections for additional library or web resources. For access to databases, research help, and writing tips, visit the Tiffin University Library.

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Time Commitment

Effective time management is possibly the single most critical element to your academic success. To do well in this online class you should plan your time wisely to maximize your learning through the completion of readings, discussions, and assignments. Because of our accelerated, seven-week term, TU online courses are designed with the expectation that you dedicate a little over **six (6)** hours per credit hour to course activities and preparation **each week**. For example, for successful completion of a three-credit, seven-week online course you should reserve roughly **twenty (20) hours per week**.

To help plan your time and keep on track toward successful course completion, note the distinctive rhythm of assignment due dates:

1. All times assume Eastern Time (GMT-4).

2. Weeks begin at 12:00 a.m. ET on Monday and end at 11:55 p.m. ET on Sunday.

3. Unless otherwise noted, initial assignments or discussion posts are due by **11:55 p.m. ET** on **Wednesdays.**

4. Additional assignments or follow-up discussion posts are due by **11:55 p.m. ET** on **Saturdays, and**

5. Major assignments and reflections are typically due by **11:55 p.m. ET** on **Sundays.**

Learning Activities

Each week, you will respond to discussion questions. Participation in the Discussion Forum depends on active and continued involvement of all students. The quality of your follow-up posts is very important to keeping the conversation going. Simply saying you agree with something doesn't add much to the conversation.

Assignments will be due throughout the course, leading up to your final course project.

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Grading

The chart below identifies the individual contributions from each type of activity, per week.

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Total
Discussions 25 25	Discussions	Discussions 25 25	Discussions 25 25	Discussions 25	Discussions 25	Discussions 25	**225**
Assignments 30	Assignments 30 50 30	Assignments 30 15	Assignments 30	Assignments 30 100	Assignments 50 15	Assignments 50 100 155	**715**
Quiz 15	Quiz **15**	Quiz	Quiz 15	Quiz 15	Quiz	Quiz	**60**
95	**125**	**95**	**95**	**170**	**90**	**330**	**1000**

Grading Scale

A: 90-100% | B: 80-89% | C: 70-79% | F: <69%

Course Schedule and Weekly Checklist

Week 1 - Importing and Working with Data in MS Excel

☐ WED: Activity 1.2 (Forum): Explore Organizational Uses of MS Excel - Initial Post

☐ WED: Activity 1.3 (Forum): Data Analytics Process - Initial Post

☐ SAT: Activity 1.2 (Forum): Explore Organizational Uses of MS Excel - Secondary Posts

☐ SAT: Activity 1.3 (Forum): Data Analytics Process - Secondary Posts

☐ SUN: Activity 1.4: Sum, Median, Exact Match in Excel

☐ SUN: Activity 1.5 Knowledge Check: MS Excel Basic Formulas, Pivot Tables and Charts

Week 2 - Extracting and Loading Public Data

☐ SUN: Activity 2.1: Public Data in Excel

☐ SUN: Activity 2.2 (Report): Uses of Excel in the Workplace

☐ SUN: Activity 2.3: Database of Databases

☐ SUN: Activity 2.4 Knowledge Check: Public Data Uses/Sources

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Week 3 - Importing and Exporting Data with MS Access

- ☐ WED: Activity 3.1 (Forum): Uses of MS Access - Initial Post
- ☐ WED: Activity 3.2 (Forum): Uses and Limitations of Benchmarking - Initial Post
- ☐ SAT: Activity 3.1 (Forum): Uses of MS Access - Secondary Posts
- ☐ SAT: Activity 3.2 (Forum): Uses and Limitations of Benchmarking - Secondary Posts
- ☐ SUN: Activity 3.3: Tables and Databases in Access
- ☐ SUN: Activity 3.4: Week 3 Reflection

Week 4 - Database Design and Data Modeling

- ☐ WED: Activity 4.1 (Forum): Combining Variance Datasets - Initial Post
- ☐ WED: Activity 4.2 (Forum): Analysis of Statistics – Reality or Misrepresented - Initial Post
- ☐ SAT: Activity 4.1 (Forum): Combining Variance Datasets - Secondary Posts
- ☐ SAT: Activity 4.2 (Forum): Analysis of Statistics – Reality or Misrepresented - Secondary Posts
- ☐ SUN: Activity 4.3: Queries in Microsoft Access
- ☐ SUN: Activity 4.4: Knowledge Check - MS Access & SQL

Week 5 - Manipulating Data Using SQL and MS Access

- ☐ WED: Activity 5.1 (Forum): Cleaning and Manipulating Data - Initial Post
- ☐ SAT: Activity 5.1 (Forum): Cleaning and Manipulating Data - Secondary Posts
- ☐ SUN: Activity 5.2: SQL in Access
- ☐ SUN: Activity 5.3 (Essay): Modifying, Cleaning and Deleting Data
- ☐ SUN: Activity 5.4: Knowledge Check - Data Cleaning and SQL in Access

Week 6 - Designing Surveys to Capture Data

- ☐ WED: Activity 6.1 (Forum): The Use of Surveys in Business - Initial Post
- ☐ SAT: Activity 6.1 (Forum): The Use of Surveys in Business - Secondary Posts
- ☐ SUN: Activity 6.2: Survey Creation
- ☐ SUN: Activity 6.4: Week 6 Reflection

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Week 7 - Merging Survey Data into Internal Data

- ☐ WED: Activity 7.1 (Forum): Using MS Access and SQL to Cleanse Survey Data - Initial Post

- ☐ FRI: Activity 7.2: Survey Analysis

- ☐ SAT: Activity 7.1 (Forum): Using MS Access and SQL to Cleanse Survey Data - Secondary Posts

- ☐ SAT: Activity 7.3: Joining Survey Data to Organization's Internal Data

- ☐ SAT: Activity 7.4: Course Project

Tips for Success

Online learning requires self-discipline and self-direction. As seekers of the truth, we should be willing to challenge one another's academic work in a spirit of respectful comradery. Your course is a place for you to grow as you benefit from the expertise, experience, and diverse perspectives of your instructor and peers. Constructive feedback will challenge you to stretch your own thinking, thereby expanding your knowledge and understanding.

To get the most out of your learning experience, you should actively engage (participate) in **ALL** course activities. Course elements are arranged chronologically. To complete a week, simply work your way "down the page" through all of the course materials and activities.

For More Information:

Be sure to review the Support, Policies, and Procedures addendum.

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