

Course Syllabus

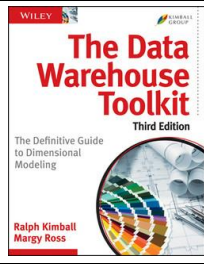
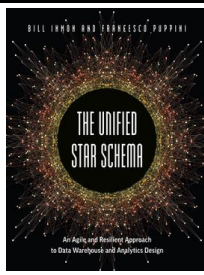
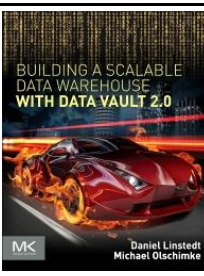


Course MIS / ACCT 6309
Course Title Business Data Warehousing
Professor Wael Damra wael.damra@utdallas.edu
Term 2024 Spring (24S)
Meetings Section S01: Friday 4:00pm - 6:45pm JSOM 1.502
 Section 502: Friday 7:00pm - 9:45pm JSOM 1.107

Contact Information

Teaching Assistant Rakshith Reddy Gorre rakshithreddy.gorre@utdallas.edu

General Course Information

Course Description	This course provides in-depth knowledge of data warehousing principles, data warehouse techniques, and business intelligence systems. The course introduces the topics of data warehouse design, Extract-Transform-Load, and data marts.	
Textbooks	The Data Warehouse Toolkit 3 rd Edition by Kimball, Ross (required)	
	The Unified Star Schema by Inmon, Puppini	
	Building a Scalable Data Warehouse with Data Vault 2.0 by Linstedt, Olschimke	
Software	Postgres on your computer Looker Studio on Google cloud BigQuery, Vertex AI on Google cloud Snowflake on Snowflake.com	We do not use SAP. This section does not count towards SAP certification.

Assignments & Academic Calendar

Week	Date	Topic	Activity
1	01-19	Foundations: Relational Databases, Data Modeling, Database Normalization, SQL	Pledge Due
2	01-26	DW / BI Primer: Transactional vs Analytical, Dimensional Modeling, Star Schema, Facts, Dimensions, DW / BI Architectures, Agile <i>ch.1</i>	Assignment 1 Due
3	02-02	Database Analytics: Aggregates Functions & Expressions, Window Functions, Common Table Expressions (CTEs), Recursive Queries	
4	02-09	Dimensional Modeling In-Depth: Fundamentals, Facts / Dimensions Techniques, Conformed Dimensions, Slowly Changing Dimensions <i>ch.2</i>	Assignment 2 Due
5	02-16	Case Studies: Retail Sales, Selecting Business Process, Declaring Grain, Identifying Dimensions & Facts, Bus Matrix, Bus Architecture <i>ch.3</i>	
6	02-23	BI Tools, Data Visualization: Data Sources, Charts, Dimensions, Metrics & Filters in BI Tool, Best Practices, Data Security, Future Trends	Assignment 3 Due
7	03-01	Cloud DW: Datasets, Tables, Saved Queries, Data Import. Other Approaches: Data Vault 2.0, Unified Star Schema. Team Project: Overview	Lab 1 Due
8	03-08	Midterm Exam	
9	03-15	Spring Break	
10	03-22	Generative AI for DW: Create/Run ML models in SQL, Model Selection/Workflow, Remote Models, Gen AI, Prompt Content/Design, AI App Features	Project Checkpoint
11	03-29	Big Data Analytics: Uses Cases, Architectures, Best Practices. DW / BI Lifecycle: Program Roadmap, Launch, 3 Parallel Tracks (Technology, Data, BI Applications), Wrap-up Activities <i>ch.21,17</i>	Assignment 4 Due / Project Checkpoint
12	04-05	DM Process, Tasks: Get Organize, Design Model. 34 ETL Subsystems: Extract, Clean/Conform, Deliver, Manage. ETL Process, Tasks: Plan, Load (One-Time, Incremental, Real-Time) <i>ch.18,19,20</i>	Project Checkpoint
13	04-12	Team Demo 1	Team Project Due ch.4-16
14	04-19	Team Demo 2	
15	04-26	Final Exam	

Course Policies

<p>Grading Criteria</p>	<p>Grading weights:</p> <ul style="list-style-type: none"> • 5% Participation • 5% Team Demo • 10% Attendance • 20% Assignments • 30% Midterm Exam • 30% Final Exam <p>Grading scale:</p> <ul style="list-style-type: none"> • A Top 25% of student • A- Next 25% of students • B+ Next 25% of students • B & Below Remaining 25% of students <p>Grading weights & scale are subject to change at the professor's discretion. It is the student's responsibility to keep track of any changes in the dates and times announced in class for assignments, team projects and exams.</p>
<p>Late Work</p>	<p>Late assignments are subject to 10% penalty for each of the first two days after the due date, and 20% penalty for each day after that.</p>
<p>Make-up Exams</p>	<p>Any request for a makeup exam without a legitimate excuse will not be accommodated.</p>
<p>Class Attendance</p>	<p>Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty.</p>
<p>Class Citizenship</p>	<p>Cell phone use is not allowed during class or exams. eLearning will be used for class content. Class materials will be posted after class is held. Class announcements (e.g., change in assignment dates) will be posted in the eLearning announcements. It is the students' responsibility to regularly check the announcements (typically by having the announcement automatically forwarded to their email accounts).</p>
<p>Class Materials</p>	<p>The professor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience.</p> <p>These materials may be downloaded during the course; however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class or uploaded to other online environments except to implement an approved AccessAbility Resource Center accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.</p>

Class Participation	Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in groups or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Successful participation is defined as consistently adhering to university requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct .
Class Recordings	<p>Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the AccessAbility Resource Center has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved AccessAbility Resource Center accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.</p> <p>The instructor may record meetings of this course. These recordings will be made available to all students registered for this class if the intent is to supplement the classroom experience. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law.</p>
Comet Creed	<p><i>This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:</i></p> <p><i>“As a Comet, I pledge honesty, integrity, and service in all that I do.”</i></p>
Academic Support Resources	<p><i>The information contained in the following link lists the University’s academic support resources for all students.</i></p> <p><i>Please go to http://go.utdallas.edu/academic-support-resources.</i></p>
Syllabus Policies and Procedures	<p><i>The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus. Please review the sections regarding the credit/no credit grading option and withdrawal from class.</i></p> <p><i>Please go to http://go.utdallas.edu/syllabus-policies for these policies.</i></p>

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the professor.