Course	**BCIS 4660.001**
Course Title	**Data Warehousing**
Professor	Kashif Saeed
Term	Summer II- 2019
Meetings	Mon & Wed 6:00pm – 9:50pm; BLB050

Professor's Contact Information

Office Phone	940) 565-4769
Other Phone	
Office Location	BLB 312E
Email Address	Kashif.saeed@unt.edu
Office Hours	Monday & Wednesdays 5pm-6pm
TA Information	TBD TA Office hours: Will be posted on Canvas

General Course Information

Pre-requisites, Co-requisites, & other restrictions	BCIS 3610 and ACCT 2010 & 2020 with grades of C or better; DSCI 3710 or 3870; 2.7 GPA. Grades of C or better in each previously taken BCIS and DSCI course, or consent of department. **This class requires a Windows laptop for hands-on and assignments. Mac users must install a Windows VM.**
Course Description	The course covers traditional (non-SAP) data warehousing concepts. We cover Data Modeling (ER and Ralph Kimball Dimensional Modeling) and Business Intelligence in this class. ETL is not covered in detail in this course, however, the instructor will share important details and an optional assignment on ETL. The course will be divided into 4 major parts: 1. Database fundamentals and ER Modeling 2. Designing a Data Warehouse using Ralph Kimball methodology 3. Using a Data Warehouse (examples from Accounting, Finance, HR, and Sales will be covered) 4. Using a Business Intelligence tool on top of a data warehouse
Key to Success in this course	• Attend classes and pay attention in the class • Take notes – the entire exam will be from topics and discussions covered in the class • Good understanding of the assignments – there can be questions in the exams from the assignments • If you have doubts, ask questions
Optional Texts & Materials	The books listed below are for reference only. The course is topic based and does not cover a book chapter by chapter. Instructor will provide handouts for each lecture – exams will be from instructor handouts and assignments.

	1. Database Refresher and ER Modeling: Database Concepts by David M. Kroenke & David Auer 2. Dimensional Modeling: Data warehouse Lifecycle Toolkit by Ralph Kimball 3. Business Objects: SAP Business Objects BI4 – The Complete Reference by Cindi Howson 4. Data Warehouse Design Solutions by Michael Venerable, Christopher Adamson
Software Used	1. MySQL and MySQL Workbench Download Link will be provided on eLearning 2. Microsoft Access Need to be purchased. University has discounted price. 3. A Business Intelligence tool of instructor choice Download Link: Will be posted on eLearning 4. **Lockdown browser** https://clear.unt.edu/supported-technologies/respondus-lockdown-browser Windows laptop required for the software to function. Mac users need to install a Windows VM. The instructor will provide install instructions for the software – it is the responsibility of the student to install the software and work with the TA to resolve any issues with software installation.

Assignments & Academic Calendar

	Week	***Topics to be covered***	***Description/Tasks***	***Assignments***
1	*07/08*	**Part 1: Database Fundamentals & ER Modeling** • *Introductions and course details* • *Syllabus Overview and Expectations* • *The data picture in enterprise* • *Database Refresher Concepts*	***Tasks:*** - *Install MySQL Workbench or Access* ** Install media and Instructions will be shared.*	*None*
2	*07/10*	• *Database refresher concepts - continued* • *ER Modeling and database design* • *Classroom Examples and Hands-on* *Book: Database Concepts by Kroenke and Auer*	*The purpose of this class is to refresh database concepts so that those with no database background can catch up with the rest of the class. Students will learn ER modeling and how ER models are translated into physical database design.*	***Assignment 1*** *Creating an ER model and implementing it in* ***MySQL or MS Access***
3	*07/15*	**Part 2: Designing a Data Warehouse**	*Discussion on Assignment 1*	

		• *Case for Dimensional Modeling* • *ER vs. Dimensional Modeling* • *Dimension and Fact tables* • *4 Step Design process* • *Classroom Hands-on – Design your first Fact table* • *Book: Data Warehouse Lifecycle Toolkit by Ralph Kimball*		
4	*07/17*	• *Conformed dimensions* • *Time Dimension* • *Null handling* • *Classroom Hands-on: Design your Time and Conformed Dimensions.* • *Slowly Changing Dimensions - Type 1, Type 2, and Type 3* • *Classroom Hands-on – Design a Type 2 SCD*		***Assignment#2 Creating a Dimensional Model and implementing it in MySQL or MS Access***
5	*07/22*	• *Role Playing Dimensions* • *Classroom Hands-on 2 – Design a multi-star schema Dimensional Model.* • *Fact less facts* • *Classroom Hands-on – Design a fact less fact table* • *Midterm Exam discussion*		
6	*07/24*	• *Midterm Exam* **Part 3: Using a Data Warehouse** • *Using an existing data warehouse in your company* • *Understanding SQL in a data warehouse environment* • *Data Warehouse usage with Business Intelligence tools* • *Finance, HR, Accounting data warehouses*	***Everyone must bring their laptops to class. It is your responsibility to install Lockdown browser before the exam.***	
7	*07/29*	**Part 4: Using a Business Intelligence tool** • *Introduction to Business Intelligence* • *How BI tools work with Data Warehouses* • *Semantic layer* • *BI tool overview* • *BI tool hands-on*	*All BI work will utilize MS Access databases.*	

8	*07/31*	• *Hands-on activities using QlikView* • *Synthetic keys, Circular Reference* • *QlikView Backend*		*Assignment#3 – Building a BI layer on top of your databases*
9	*08/05*	• *Building reports and dashboards using the BI tool* • *Class hands-on*		
13	*08/07*	***Final Exam – 70 points*** ***Syllabus**: Comprehensive*	***Everyone must bring their laptops to class. It is your responsibility to install Lockdown browser before the exam.***	

Course Policies

Grading (credit) Criteria	The course uses RANK based grading Top 30% Students – A Next 40% Students– B Next 30% Students – C and Other grades * You must score more than 130 points to avoid a 'D' or 'F'. **Grading Points (250 total)** Assignments – 90 points (3 assignments @ 30 points each) Midterm – 50 points Final Exam – 70 points (comprehensive) 4 Class Activities @ 10 points each – 40 Points
Make-up Exams	There will be no make-up exams. However, I will work with you if you have a date conflict and would like to change the date of your exam.
Extra Credit	None
Late Work	Penalty on late assignments will be listed on the Assignment itself.
Software Installation	It is your responsibility to install the software. The instructor and the teaching assistant are available to help, however, you MUST NOT assume that the instructor and/or teaching assistant till install the software for you.

Assignments	It is your responsibility to complete the assignments with or without the teaching assistant help. Remember that the teaching assistant is NOT responsible to solve your assignments for you – he/she can only guide you and provide high-level support to get past the obstacle that you may be experiencing.
Classroom Citizenship	Your behavior interferes with my ability to teach and student's ability to learn; unacceptable behavior will not be tolerated in my class. Students engaging in disruptive behavior will be asked to leave the classroom and will be referred to the center of student rights and responsibilities. Chatting, giggling, laughing, use of cell phone or other hand-held devices, texting, using a laptop while the instructor is teaching, making noises, etc. are examples of disruptive behavior. **Penalty for Disruptive Behavior:** • You will lose 25 Grade Points per offense of disruptive behavior for the first two offenses. The instructor will note down your name and will deduct the points at the end of the semester. • After two offenses of disruptive behavior, you will lose 50 points per offense. • These points will be deducted from your Exam and Assignment total. In addition, the instructor reserves the right to move you to a different seat during exams if the instructor believes that you are involved in cheating, plagiarism, or disrupting others.
Exam Reviews	Exam Reviews DONOT mean that I will provide highlighted text the exam will be from or provide sample question for the exam. Exam Reviews mean that you will have class time to clear any doubts you may have from the previous classes; it is my responsibility to ensure that I explain to clear your doubts, but it is your responsibility to come prepared to the exam review class to ask questions. If you have not attended classes prior to the exam review, do not assume that I can cover the material from all previous classes in the exam review class.
Class Attendance	Strongly recommended – missed quizzes cannot be made up.
UNT Policies	**Academic Integrity Standards and Sanctions for Violation.** According to UNT Policy 18.1.16, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. [Insert specific sanction or academic penalty for specific academic integrity violation]. **ADA Statement.** UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website at disability.unt.edu **Emergency Notification & Procedures.** UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

	Acceptable Student Behavior. Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at deanofstudents.unt.edu/conduct. **Student Perceptions of Teaching.** Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13 and 14 of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via *IASystem* Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the spot website at www.spot.unt.edu or email spot@unt.edu.

The descriptions, timelines, grading policies, or other information contained in this syllabus are subject to change at the discretion of the Professor.