Course Topics from the Books	
WEEK#	ASSIGNMENTS DUE
Week 1	SQL Server Architecture, Physical Database and overview of TSQL Querying
Week 2	Single Table Queries
Week 3	Multi-table Joins, set theory and understanding the physical model
Week 4	Subqueries Table expressions and Miscellaneous SQL Objects
Week 5	Table expressions
Week 6	Set Operators
Week 7	Data Modification and **Mid-term**[1]
Week 8	Clustered, Non-Clustering Indexing, foreign keys
Week 9	User Defined Datatypes
Week 10	Beyond the fundamentals of Querying
Week 11	Database Normalization and Modeling Introduction - Conceptual, Logical and Physical Data Models
Week 12	Data Modeling Introduction
Week 13	Data Modeling Components
Week 14	Data Modeling Components continued
Week 15	Relational Calculi from TSQL perspective and Backup and Restore
Week 15	Transactions, concurrency and Programmable objects **Final**[2]

[1] Online classes will have their mid-term during free hour on a Monday or Wednesday
[2] Online classes will have their final during free hour on a Monday or Wednesday

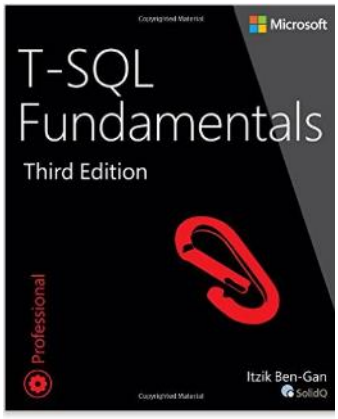
Database and Data Modeling (ERD)

Title	Database and Data Modeling (ERD)
Description	*SQL; transactions, concurrency and recovery; query processing. Programming projects& modeling; functional dependencies and relational design; file organization and indexing; relational algebra and calculi as query languages.* A practical technological approach to understanding relational theory with hands-on tools. You will learn ANSI SQL and Entity Relationship Modeling. It will be implemented in a Windows 10 environment using Microsoft's SQL Server 2017 Database: 1. Learning the differences in developing a conceptual, logical and physical data models by leveraging *functional dependencies and relational design.* 2. Model and implement the *relational database design.* 3. Database file organization and indexing. Students will actively participate in this course through class discussions, project preparation and PowerPoint presentations.
Learning Goals	Upon successful completion of this course, students will be able to: • Develop SQL querying solutions through critical thinking skills in a professional work environment as team member or lead. • Understanding how to write relational calculi expressions based upon your TSQL querying knowledge. • Understanding and working with metadata and taxonomies • Creating indexes and foreign keys on your physical database design. • Create ERD diagrams of logical models. • Understanding subject areas in ERD diagrams and how to create them within the SSMS database environment. • Importing and exporting data to/from the database • Creating reports using SSRS/Reportbuilder 2016
Office Hours	My office hours: ✓ 1:30 to 2:30 Tuesdays and Thursdays ✓ Microsoft Teams meetings upon request through email
Grades	Your final grade in the class will be calculated as follows: ✓ 35% Midterm Exam

	✓ 35% Final Exam or Individual project ✓ 20% Projects (Group and/or Individual) up to 3 ✓ No Curves but grades will be affected by up to 10% based upon your effort in the following: o Homework assignments are not optional: ▪ Prep Homework (PHW) ▪ Homework (HW) o Class participation
Exam Policy	**The midterm exam will be administered in class sometime in the middle of the semester**. The date will be announced in the first few weeks of the semester. There is **no scheduled make-up for the exam**; so, if for some reason you are unable to attend the exam, you should contact the instructor ahead of time to discuss the circumstances. ***The final exam will occur by the last day of classes prior to the final exam period of the semester.***
Class Participation Policy	Your class participation grade will be determined based on your attendance and active participation in class throughout the semester. Participating in discussions, answering questions, reading the textbook before class, and participating during in-class activities are all good ways to show "active participation." There are also CUNY/Queens College policies that can become applicable if there is an excessive number of lateness or absences. Being considerate of your fellow students in the classroom is also an important part of your "class participation" grade. You can do this by not causing a distraction for your fellow classmates -- you can remember to turn off and put away your cell phone before class, arrive on time for class, avoid side conversation or noise during class, etc. A good learning environment is also one in which everyone feels welcome and comfortable; so, please be respectful of the diversity of backgrounds, beliefs, and lifestyles of the students in our class.
Textbook Policy	We will be following the organization and terminology of the textbook throughout the semester. (We will be covering some topics in a different order than they are presented in the textbook -- see the "COURSE TOPICS" section below.) You are encouraged to read the relevant chapters of the textbook before each class.
Grading Questions	Your grades will be posted on Blackboard during the semester. If you have specific questions about your grade on an assignment or exam, then the best way to proceed is to send an e-mail with your question to the instructor. You should mention which problem/question you

	are referring to, and you should discuss why you feel the grade should be reexamined
Lecture Slides	**Slides will not appear in the Course Documents page of the Blackboard site.**
Assignments Homework	Assignments will appear in the Assignments page of the Blackboard site as they are announced. Unless otherwise specified, **homework is due by 11:59 PM before class**. If homework is required to be submitted on time. It is a binary grade: 1. never submitted (minus one) 2. Late(zero) 3. Submitted (one) There is no concept of late homework. It will be accepted as a zero and it is to your benefit to do it on time or late for your own learning experience. There will be 2 types of homework assignments: ✓ Prep Homework (PHW) is reading the chapter(s) assigned prior to class and execute the book examples which are due the day before class. o The homework cannot be late. The grade is either -1, 0 or 1. o It will be submitted as a pdf of the screen shots of the execution of the groups SQL plus the following o You will be provided a word template for the submission format. ✓ Homework (HW) o There will be an individual\group homework assignment testing your ability to apply the techniques of what you have learned in each chapter.
Projects	Projects will be posted on the course page on Blackboard or a link to a video homework assignment. Tentatively, there will be up to three projects for the semester. (They will be worth 20% of the final grade.) Based upon the type of project, it will require you to do an independent and/or group analysis that -provides answers to the problem. We will discuss this in class.

	All of the project assignments must be submitted to Blackboard with a URL link to you cloud storage All projects that are assigned are required to be turned in on time. **Any project that is missing, will be a reduction of 20% of your final grade.**
RESOURCES	The textbook for the course is your primary resource for background information about the important data structures we will be learning about. You may also find it useful to consult websites about the Java programming language or about the Blackboard course website. Logging-In to the Blackboard Online Course System: http://qcpages.qc.edu/edtech/Blackboard/loggingOn.html Information about Using Blackboard: http://qcpages.qc.edu/edtech/Blackboard/students.html Supplemental information Websites: 1. Query Information a. https://www.google.com b. https://www.bing.com 2. Videos & Class related material a. bit.ly/CSCI331-DockerStuff b. bit.ly/VideoTutorialsToGetStarted c. bit.ly/CSCI331SupplementalSqlVideos d. bit.ly/TechBrothersIT e. bit.ly/WiseOwlTutorials

Textbooks	T-SQL Fundamentals (3rd Edition) 3rd Edition 1.  ISBN-13: 978-1509302000 ISBN-10: 150930200X
Software	**1. Windows 10** 2. Docker container SQL Server 2019 Developer Edition[3] 3. SSMS Latest release 4. Azure Data Studio 5. Office 365 6. VSCODE Note: All software must be installed for the second day of class

[3] https://www.microsoft.com/en-us/evalcenter/evaluate-sql-server-2017-rtm