



TOURO COLLEGE COURSE SYLLABUS

Graduate School of Technology

DEPARTMENT: Master's Program In Information Systems
COURSE TITLE: Advanced Database Administration
COURSE NUMBER: MSIN 616
PREREQUISITES: MSIN 615
CREDIT HOURS: 3
SEMESTER: Fall 2017
SCHEDULE: 6:15PM to 9:30PM (Mondays from 09/11/17 to 12/18/17)
LOCATION: Room/Lab#603, 27 W 23rd St, Manhattan, NY 10010
FINAL EXAM: TBA

INSTRUCTOR CONTACT INFORMATION

Instructor Name: Andrew Katz
Email Address: Andrew.Katz17@touro.edu
Contact Phone: 201-530-1441
Office Location/Hours: TBA

COURSE DESCRIPTION

This course covers advanced topics in database design and administration focusing on complex SQL queries, System Databases, User T-SQL UDFs, Stored Procedures, and Triggers. Microsoft SQL Server with Visual Studio is used as a platform.

COURSE/INSTITUTIONAL OBJECTIVES

This course is intended to further develop the analytical and technical skills necessary for students to function effectively in our increasingly technology-based society. It develops the student's abilities to solve problems, think analytically and troubleshoot. This course serves to prepare the student to pursue a career in the fields of database programmer and/or database administrator.

COURSE/DEPARTMENTAL OBJECTIVES

The students will learn:

How to create advanced queries including correlated subqueries and crosstab queries

How to use the execution plan in order to optimize a query

SQL-Server data types and functions associated with them

How to find the appropriate system function to solve a problem and to navigate on line SQL Server books

How to implement stored procedures, functions and triggers in a SQL Server database

COURSE/PROGRAM OBJECTIVES

Help students develop necessary advanced skills to design, administer, and maintain SQL Server Databases

METHODOLOGY

Each class will consist of a review of the prior assignment, a quiz on the prior assignment, a lecture, and a hands-on lab performed by students on individual dedicated computers under the guidance of the professor.

GRADING GUIDELINES

It is anticipated that there will be 10 to 11 quizzes in the course. Top 8 grades will be counted.

Quizzes (3 pts each)	24 %
Mid-Term Exam	26 %
Cumulative Final Exam	40 %
Class participation	10 %

ENTRANCE COMPETENCIES

Students are expected to have a basic understanding of relational databases and SQL Language in client server environments. Ideally, they should have basic to intermediate familiarity with DDL and DML and database normalization

COURSE EXPECTATIONS

Students will be learning about Databases, T-SQL, Indexes, Scripts, Performance, functions, Stored Procedures, and Triggers

EXIT COMPETENCIES

After completing the course, students will be able to design and implement a database with optimized queries, UDFs, stored procedures and triggers. They will be aware of the tradeoffs associated with different designs and intelligently choose the most appropriate solution for their problem requirements.

TENTATIVE COURSE CONTENT

Session	Topics	Textbook Chapter
1	Relational Databases, Keys, Indexes, Data Types	1, 2, 8, 10
2	Creating Databases, Tables	11, 12
3	Populating Tables, INSERT statement	7
4	Single Table Queries	3
5	Multi Table Queries	4
6	Summary Queries, Subqueries	5, 6
7	Complex Table Expression (CTEs) / MIDTERM	6
8	Functions	9
9	UPDATE, DELETE statements	7
10	Views	13
11	Scripts, User Defined Functions (UDFs)	14, 15
12	Stored Procedures, Triggers	15
13	FINAL	

TEXT BOOK

Title: **Murach's SQL Server 2016 for Developers**
Authors: Bryan Syverson, Joel Murach
ISBN #: 978-1-890774-96-7

Bibliography

Title: **T-SQL Querying (Developer Reference)**
Author: Itzik Ben-Gan
ISBN#: 978-0735685048

Title: **T-SQL Fundamentals (3rd Edition)**
Author: Itzik Ben-Gan
ISBN#: 978-1509302000

Title: **SQL Queries for Mere Mortals: A Hands-On Guide to Data Manipulation in SQL (3rd Edition)**
Author: John L. Viescas, Michael J. Hernandez
ISBN#: 978-0321992475

Title: **SQL Antipatterns: Avoiding the Pitfalls of Database Programming (Pragmatic Programmers)**
Author: Bill Karwin
ISBN#: 978-1934356555

Title: **SQL Cookbook: Query Solutions and Techniques for Database Developers**
Author: Anthony Molinaro
ISBN#: 978-0596009762

Related internet sites

textbook materials for students:

<https://www.murach.com/shop/murach-s-sql-server-2016-for-developers-detail>

SQL Server Express 2016 free download from Microsoft:

<https://www.microsoft.com/en-us/sql-server/sql-server-editions-express>

Instant SQL Formatter online:

<http://www.dpriver.com/pp/sqlformat.htm>