

Boston College

Woods College of Advancing Studies

MT 360 – Database Management

Course website: <http://cms.bc.edu>

Wed 6:30 pm–9:00 pm

Classroom: O'Neill 245

Instructor: John B. McLaughlin

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Course Description

Whether one realizes it or not, modern life would not be possible without databases. Simply put, they are everywhere behind-the-scenes supporting so much of what we do. Furthermore, they are not going away! Database usage will only grow both as knowledge grows and more of that knowledge is captured electronically and comes online.

If organizations run on knowledge, effective organizations depend on data management and analysis to integrate their systems with their strategies and their operations. This course analyzes the structure of database management systems, guides you through techniques for querying and analyzing an organization's data, and teaches you how to build a well-structured relational database. Database management systems are studied, databases are compared to other technologies for storing and using data, and students develop extensive hands-on skills in exploring and querying databases. Students also analyze a set of information requirements, and then design and build a database. Oracle and the SQL language will be used extensively.

By learning database management, the diligent student will make herself/himself more useful at work and more valuable to her/his employer.

Course Text:

The text will be put online so that the student does not have to buy it. The text to be used is: *Oracle Database 10g: The Complete Reference* by Kevin Loney; McGraw-Hill/Osborne (ISBN: 0072253517)

Optional Text:

SQL for Dummies (ISBN: 0470557419)

Major Requirements

The Structured Query Language (SQL) is introduced early in the course, and thereafter students will carry out weekly assignments that extensively use most of the features of this language. Later assignments will build on earlier ones, so each assignment will have a firm deadline.

Case Study of an Organization's Data Requirements

Students will receive a general description of an organization and its requirements to capture and analyze information. After further analysis, small groups will design and build a database to meet these requirements, and will then test its adequacy.

Topics covered in the class will include (but are not limited to):

- Data, information, knowledge, and expertise
- Databases: their rationale, background and uses
- The SQL language
- Understanding and Using Schemas
- Select, insert, update
- Distinct
- Functions
- Nulls
- Order by
- Booleans, like, wildcards, between
- Group by, and 'rolling up' data
- Aggregate functions
- Multi-Table joins
- Sub-queries
- views
- Keys

Grading

Final Exam: 35%

Database-building Project: 25%

Assignments: (focused on SQL mastery): 20%

Class participation: 10%

Quizzes: 10%

Work outside of classroom

Traditionally, students were expected to spend 2 hours outside of class for each 1 hour in class. As with most things, the student will get *out* of this class in direct proportion to what he/she puts *into* the class.