COSC 304
Introduction to Database Systems

Course Summary and COSC 404

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Course Summary

The COSC 304 course goal was to:

Become an expert database user with the ability to query existing databases using SQL, design new databases using UML, and write programs that use databases.

High-demand skills acquired:

- Querying: SQL, relational algebra
- Database design: ER, UML
- Programming: Java, JDBC, PHP, HTML, JSON, XML, XPath
- Database skills make you more marketable and allow you to construct more sophisticated systems.
- All these skills practiced during the labs and project.

Survey Question: Lecture Value

Question: On a scale of 1 to 5 with 5 being the highest, how valuable/useful was the lecture time?

A) 1

B) 2

C) 3

D) 4

E) 5

Survey Question: Lab Value

Question: On a scale of 1 to 5 with 5 being the highest, how valuable/useful was the lab time and assignments?

A) 1

B) 2

C) 3

D) 4

E) 5

Survey Question: Workload

Question: On a scale of 1 to 5 with 1 being very low and 5 being very high, how was the overall workload compared to other courses and your expectations?

A) 1

B) 2

C) 3

D) 4

E) 5

Survey Question: Clicker Value

Question: On a scale of 1 to 5 with 5 being the highest, how valuable/useful were the clicker questions used in-class?

A) 1

B) 2

C) 3

D) 4

E) 5

COSC 304 vs. COSC 404

COSC 304
Introduction to
Database Systems

COSC 404
Database System
Implementation

Database Design and Programming
- Data models - ER, relational, XML, JSON
- Query languages - SQL, relational algebra
- Design project
- Database skills and techniques as a user
- How to use a DBMS ; how to build a database

Database System Implementation
- Storage and index structures
- Transaction management, concurrency control
- Query processing, recovery and reliability
- How to build a DBMS
- Non-relational systems and architectures
- How to select a DBMS

COSC 404 Course Goals

COSC 404 is about how a database works (the "**black box**").

- Inside is storage, indexing, query processing/optimization, transactions, concurrency, recovery, distribution, lots of stuff!

Goals:

1) Be a better, "expert" user of database systems.
2) Be able to use and compare different database systems.
3) Adapt the techniques when developing your own software.

You will gain ***lots*** of industrial experience using a variety of databases and became a better, more experienced developer.

- MySQL, PostgreSQL, Microsoft SQL Server, MongoDB, JUnit, VoltDB, Java, JDBC, javacc, JSON, Map-Reduce, SQL

Thank you for a great course!

Good luck on the exam!