

DATABASE CONCEPTS AND SQL

School of Advanced Technology

Course Number: NET3000

Bachelor of Information Technology – Network Technology

Instructor
Phil Kaufman

INTRODUCTION

DATABASE CONCEPTS AND SQL

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Course Number: NET3000

Applicable Program(s):

Bachelor of Information Technology - Network Technology

Course Hours:

4 hours per week (2 hours lecture, 2 hours lab)

WHAT WILL YOU LEARN

Concepts and fundamentals of relational database systems.

Students learn how to design relational databases starting from a conceptual data model, following accepted logical and physical design principles.

Topics include normalization, referential integrity, SQL DDL and SQL DML, DBCC and data extraction/filtering techniques.

YOUR INSTRUCTOR

Phil Kaufman

Bmath/Computer Science, University of Waterloo

26 years experience in IT industry

Contact info:

kaufmap@algonquincollege.com

Office hours: By request - with notice

COURSE HOURS

Lectures:

Mondays 11am - 1pm

Labs:

Wednesdays 8am - 10am, 10am - 12pm (noon)

Notes

“Lectures” provide prep material for the lab work. Miss lectures at your own peril!

**In Labs, do your own work. Examples are samples only. Do lab prep work ahead of time.
Late lab assignments = 0**

Blackboard - will use

FINAL GRADES

Theoretical component

- 1. Term Test 20%**
- 2. Final Exam 35%**

Practical component

- 3. Lab Assignments 40%**
- 4. In-lab exercises 5%**

The student must pass the Theoretical component in isolation. Also must get at least a grade of 50% total mark.

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CLASSROOM ETIQUETTE

For lectures:

- **please be quiet**
- **ask questions**
- **if you bring food, give sample to me**

For labs:

- **no food or drinks, period**
- **bring all your required supplies**
- **hand in assignment before you leave**

COURSE TIMELINE

Week	Topics
1	Course Overview, Introduction to DBMS. Introduction to Structured Query Language (SQL)
2	Simple SELECT statements Group By and Natural Joins
3	Joins (Inner, Left, Right, Self- join) Null Like INSERT, UPDATE, DELETE statements Functional Dependency and Keys (candidate, PK, alternative)
4	1NF, 2NF, 3NF, 4NF
5	Creating Databases Entity Relationship Diagrams (ERDs), Types of Data Relationships (1:1, 1:N, M:N) Data Integrity :: Entity & Referential Data Integrity :: Referential and Domain

COURSE TIMELINE

Week	Topics
6	TERM TEST
7	Data Integrity :: Domain and Business / User-Defined Return Term Test
8	Loading Data Triggers
9	Transactional Integrity Security Introduction to XML XML and SQL Server
10	Backup and Restore SQL Server and Remote Connectivity Course Review

CLASSROOM TEXTBOOKS

Suggestions:

- **Microsoft SQL Server 2008 Implementation and Maintenance, ISBN 978-0-470-18367-0**
- **Microsoft SQL Server 2008 Implementation and Maintenance - Lab Manual, ISBN 978-0-470-18368-7**

CLASSROOM RESOURCES

Suggestions:

SQL Language

www.w3schools.com/sql/default.asp

SQL Server 2008

<http://msdn.microsoft.com/en-us/library/bb545450>

www.microsoft.com/sql

www.microsoft.com/net

www.technet.microsoft.com

Youtube

Google