

# North Hennepin Community College

## CSCI 2030: Database Modeling and Design

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites:

This course requires both of these prerequisite categories

1. CSCI 1040 - Fundamentals of Structured Query Language (SQL)

And

2. Any one of these three

CSCI 1120 - Programming in C/C++

CSCI 1130 - Introduction to Programming in Java (CS0) (Minimum grade: 1.67 GPA Equivalent)

CSCI 1150 - Programming in C# for .NET (Minimum grade: 1.67 GPA Equivalent)

Corequisites: None

MnTC Goals: None

This course covers relational databases from conceptual design to implementation. The course will include logical and physical design, normalization, as well as the definition of tables and indexes. The use of Structured Query Language (SQL) for data retrieval and manipulation will be emphasized. Prerequisite: CSci 1040 and CSci 1120 or CSci 1130 or CSci 1150

PLEASE NOTE: Students enrolled in CSCI 1040 can register for CSCI 2030 in anticipation of successful completion of CSCI 1040. Please contact Registration.

**B. COURSE EFFECTIVE DATES:** 07/10/2001 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. The course combines the practical aspects of database management system (DBMS) with more theoretical discussions of database design. Students will design their own databases and implement them on Microsoft SQL Server.
2. The topics include definition of tables and keys, logical and physical database design, entity-relationship (ER) model, schema normalization, and Transactional Structured Query Language (Transact-SQL) for data retrieval and manipulation. The hands-on approach introduces students to a database management system (Microsoft SQL Server).
3. This course enables students to understand database design for effective data management, storage and retrieval. Students will learn why databases are used and the benefits of doing so.

### D. LEARNING OUTCOMES (General)

1. Comprehend database design concepts for organizing data. (NHCC ELOs 1,2 Critical Thinking, comp. a; Program goal D).
2. Analyze data for designing efficient databases (NHCC ELOs 1,2 Critical Thinking, comps. a, b, c; Program goal D).
3. Apply database design principles for efficient data management, storage and retrieval. Program (write the scripts) with thorough attention to details. (NHCC ELOs 1,2 Critical Thinking, comps. a, b, c, d; Program goal D).
4. Develop critical thinking skills through data analysis and organization. (NHCC ELOs 1,2 Critical Thinking, comps. a, b, c, d; Program goal A).

**E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

1. Knowledge of Human Cultures and the Physical and Natural World --Through study in the sciences, mathematics, social sciences, humanities, histories, languages, the arts, technology and professions.
2. Intellectual and Practical Skills - Including: Inquiry and analysis; Critical and creative thinking; Written and oral communication; Quantitative literacy; Information literacy; Teamwork and problem solving.