North Central Michigan College

NCMC MASTER COURSE SYLLABUS
Last Date Revised: 10/17/07

DIVISION/AREA: Business and Technology DEPARTMENT: CIS

DIVISION DIRECTOR: Robert J. Marsh, Ph.D., P.E. ORIGINATOR: Hwee-Joo Kam

DEAN OF INSTRUCTION: Timothy Dykstra, Ph.D.

TOTAL HOURS OF INSTRUCTION: LECTURE: 2 LAB: 2 TOTAL CONTACT HOURS: 70.4

COURSE NUMBER: CIS 215 CREDIT HOURS: 3

COURSE TITLE: Database Design and Management

TRANSFERABLE YES: NO: xx TO:

PREREQUISITE(S)/COREQUISITE(S)/ADVISORY:
CIS 100 and at least one of the following: CIS 104, CIS 105 or CIS 115

GENERAL EDUCATION DISTRIBUTION: N.A.

CATALOG DESCRIPTION:
Introduces the concepts of relational databases, logical database design, and database development. Students will learn about conceptual data modeling, relational data modeling, and normalization. Using Structured Query Language (SQL), students will gain hands-on experience in developing databases and manipulating data. Nested queries and PL/SQL (Procedural Language) will be introduced in this class.

GENERAL EDUCATION OUTCOMES:
- Think critically and analytically
- Independently acquire knowledge
- Write and speak effectively

COURSE OBJECTIVES & OUTCOMES:
- understand the concepts of the conceptual data model and relational data model
- understand the process of normalization
- design a database using Entity-Relationship Diagram (ERD)
- run simple query, nested query, and complex query
- create stored procedure using PL/SQL in Oracle

METHODS OF INSTRUCTION:

Lecture
Demonstration

Hands-on tutorials
Internet based materials
Student programming

METHODS OF EVALUATION:

Exams, take home assignments, hands-on lab exercises, quizzes and class participation.

REQUIRED TEXTS AND MATERIALS:

- TEXTS:
  - Database Design and Development, A Visual Approach; Raymond Frost, John Day, Craig Van Slyke; Pearson Prentice Hall: Upper Saddle River NJ, 2006; ISBN: 0-13-035122-9;
  - Oracle 10g: SQL; Joan Casteel; Course Technology: Boston MA, 2006; ISBN: 978-1-4188-3629-0

OPTIONAL SUPPLEMENTARY MATERIALS:

Reasonable accommodations can be provided to students with documented disabilities. Please contact Learning Support Services at 348-6817 to arrange these.

TIME ALLOWANCE AND SEQUENCE OF INSTRUCTION:

Week	Course Topic
1	Course Overview The Role of Database in Electronic Business
2	Relational Theory
3	Conceptual Design
4	Conceptual Design (continued)
5	Normalization
6	Normalization (continued)
7	Normalization and Basic SQL
8	Basic SQL SELECT Statements Table Creation and Management
9	Constraints
10	Constraints and Data Manipulation
11	Data Manipulation and Transaction Control
12	Restricting Rows and Sorting Data Joining Data from Multiple Tables
13	Data Joining, Subqueries
14	Subqueries and Merge
15	Introduction to PL/SQL
16	Review, overview; PL/SQL