GROSSMONT COLLEGE

Official Course Outline

COMPUTER SCIENCE INFORMATION SYSTEMS 180 – FUNDAMENTALS OF DATABASE DESIGN

1. Course Number Course Title Semester Units Semester Hours

CSIS 180 Fundamentals of 3 3 hours lecture: 48-54 hours

Database Design 96-108 outside-of-class hours 144-162 total hours

2. Course Prerequisites

None.

Corequisite

None

Recommended Preparation

A “C” grade or higher or “Pass” in CSIS 110.

3. Catalog Description

This course introduces the student to fundamental design strategies of relational data models for organizations. Concepts will include assessing organizational needs, logical design and application generating tools, normalization strategies, database architectures, data models, integrity rules, and query formulation skills. Students will formulate, design, implement, and manipulate databases using a commercial software package.

4. Course Objectives

The student will:

a. Identify and analyze business needs.

b. Construct logical database designs.

c. Identify data storage strategies.

d. Design query statements for data retrieval.

e. Produce E/R diagrams for database development.

f. Interpret user requirements.

g. Design forms and reports.

h. Analyze various Computer Aided Software Engineering (CASE) tools and evaluate their advantages and disadvantages.

5. Instructional Facilities

Computer lab.

6. Special Materials Required of Student

None.

7. Course Content

a. Introduction to database architectures.

b. Interpreting organizational needs.

c. Data integrity.

d. Relational data models.

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7. Course Content (continued)

e. Query formulation.

f. Use of E/R diagrams.

g. Implementing the design.

h. Data entry forms and reports.

i. Case tools.

8. Method of Instruction

a. Demonstration.

b. Lecture.

9. Methods of Evaluating Student Performance

a. Written tests, including essay questions.

b. Reinforcement exercises.

c. Written final exam.

10. Outside Class Assignments

a. Read and study the class text.

b. Practice exercises.

c. Prepare a database project with complete documentation.

11. Texts

a. Required Text(s):

Pratt, Phillip J and Mary Z. Last. *Concepts of Database Management* (8th Edition). Cengage Learning, 2014.

b. Supplementary texts and workbooks:

None.

Addendum: Student Learning Outcomes

Upon completion of this course, our students will be able to do the following:

* 1. Identify the requirements needed to solve a business problem or need by utilizing a database solution.
  2. Design a database based on the requirements identified, including the logical design of tables to hold the necessary data, and queries and reports to produce the required output information.

Date approved by the Governing Board: May 16, 2017