Syllabus

CSC 251 Applied Database Concepts

General Information

Date

September 1st, 2012

Department

Computing Sciences

Course Prefix

CSC

Course Number

251

Course Title

Applied Database Concepts

Course Information

Credit Hours

3

Lecture Contact Hours

3

Lab Contact Hours

0

Other Contact Hours

Catalog Description

An introduction to database design and development. Database normalization, data integrity, concurrent updates, and data security will also be discussed and practiced. Emphasis will be on using at least two popular database management systems to build and maintain relational databases. The student will create databases, queries, custom forms and reports. Additionally, SQL programming will be used extensively.

Key Assessment

This course does not contain a Key Assessment for any programs

Prerequisites

None

Co-requisites

None

Grading Scheme

Letter

First Year Experience/Capstone Designation

This course DOES NOT satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed category

None

FLCC Values

Institutional Learning Outcomes Addressed by the Course

None

Course Learning Outcomes

Course Learning Outcomes

None

Relationship to Academic Programs and Curriculum including SUNY Gen Ed designation if applicable:

This course is required in the AS Information Systems degree program and in the AAS Information Technology (Web and Multimedia Application Development advisement area) degree program. AS Computer Science majors can take this as an elective.

Outline of Topics Covered

1. Define and use common database terminology.

a. Background

b. History of Database Management

c. Advantages and disadvantages of Database Processing

d. Data, Storage, Retrieval, and Update

e. Shared Update

f. Backup and Recovery

g. Security

h. Integrity

i. Data Independence

j. Replication

k. Utilities

2. Determine how data are organized and manipulated using a database.

a. Relational Databases

b. The Relational Algebra

c. Hierarchical Databases

d. Network Databases

3. Identify data that are suitable and unsuitable for databases.

a. Distributed Databases

b. Client/Server Systems

c. Data Warehouses

d. Object-Oriented Databases Management System

e. The Internet and Intranets

4. Normalize Tables

a. Functional Dependence

b. Keys (Primary, Foreign and Secondary Keys)

c. First Normal Form, 2nd, 3rd normal forms

d. Incorrect Decompositions

e. Multivalued Dependencies and Fourth Normal Form

f. Avoiding the Anomalies Problem

5. Design and build databases.

a. Information-Level Design

i. The Methodology

ii. Databases Design Examples

iii. Identify Relationships