CSC 452 - DATABASE APPLICATION DEVELOPMENT

CREDIT HOURS: 3
PREREQUISITES: CSC 340 and 351.
GRADE REMINDER: Must have a grade of C or better in each prerequisite course.

CATALOG DESCRIPTION

Applied study of the logical and physical organization of database systems and their role in information technology. Design and implementation of applications using database management systems. May not be used to satisfy computer science requirements for a major or minor in computer science or computer information system.

PURPOSE OF COURSE

The focus of the course is on application development with fourth generation systems. Applications using a third generation host language and application generators are used to demonstrate concepts and techniques.

EDUCATIONAL OBJECTIVES

Upon successful completion of the course, students should be able to:

1. Demonstrate an understanding of the value of database technology.

2. Design databases.

3. Create database applications.

COURSE CALENDAR

This course meets for a minimum of 37.5 lecture contact hours during the semester, including the final exam. Students have significant weekly reading assignments. Students are expected to complete 3-4 homework assignments, 2-3 in-class assignments, a major project and make 1-3 major class presentations during the phases of the project, and 2-3 periodic exams in addition to the final exam. Students are expected to prepare for any class assignments or quizzes over the material covered in class or in the reading material. Successful completion of these activities requires at a minimum six additional hours of outside of classroom work each week.

CONTENT   HOURS

File and database concepts...4
    Background, functions of a database management system, overview of database models, architecture, data description language, data manipulation language.

The relational model 6
    Concepts underlying database applications, including basic tables, queries, forms, reports, web interfaces, stored procedures and use of Structured Query Language (SQL).

Database design 6
    Entity relationship diagrams.
    Normalization up to Boyce Codd normal form.

  Recursive relationships.
  Supertypes, subtypes.

Database application development 16
  Queries, updates, forms and reporting, stored procedures,
  Web interfaces, Programming database applications, Importing/Exporting data.

Database administration and control..5

Distributed databases, Data warehousing, Current topics 5

Exams...3

                   TOTAL 45

REFERENCES

Beighley and Morrison, Head First PHP & MySQL, O'Reilly Publishing, 2009.

Coronel, C., Morris, C., Database Systems: Design, Implementation, and Management, 11th Ed., Course Technology, 2015.

Gosselin, Kokoska, and Easterbrooks, PHP Programming with MySQL, Course Technology/Cengage Learning, 2011.

Pratt and Adamski, Concepts of Database Management, 8th Ed., Course Technology, 2012.

Pratt and Last, A Guide to mySQL, Course Technology, 2006.

Ricardo, C.M., Databases Illuminated, 2nd Ed., Jones and Bartlett, 2011.

Quigley and Gargenta, *PHP and MySQL by Example*, ISBN 978-0-13-187508-1, Prentice Hall/Pearson Education, 2007.