COMP 281 Study Guide for FUPE

Format

The FUPE exam for COMP281 is an online exam. You will have up to 3 hours (180 minutes) to take the exam. It is worth up to 150 points. You must get an 80% or above to pass this FUPE.

There are 87 total questions on this exam. There are 25 T/F (worth 1 point each), 25 M/C (worth 1 point each), 10 short answer/essay (worth 3 points each), 15 SQL (worth 2-4 points each for a total of 40 points), 4 normalization (worth 2-3 points each for a total of 10 points), 5 ERD (worth 2 points each for a total of 10 points), and 3 transaction management (worth 3 or 4 points each for a total of 10 points).

Prerequisites

College Algebra (MATH 160), AND Introduction to Computer Science & Object-Oriented Programming (COMP 111), OR Problem Solving with Computing (COMP 101), OR Principles of Programming (ITEC 136)

Recommended Textbook and other Resources

Textbook

- Coronel, C., & Morris, S. (2017). **Database systems: Design, implementation, & management** (latest edition). Boston, MA: Cengage Learning. ISBN (print): 978-1-305-62748-2, 978-1-305-88684-1 (eText).

- You may also want to purchase the following book if you have little or no experience with SQL.

  o **Harper, Sue (2009).** *Oracle SQL Developer 2.1*. **(1st). Packt Publishing, Ltd.. ISBN: 978-1-847196-26-2.**

  This book and many others dealing with Oracle, SQL and other technical topics are available online free through the Franklin University Library's Safari Tech Books Online database.

Course Description

This course, Database Management Systems, covers the fundamental concepts necessary for the design, use, implementation and administration of database systems. The course will stress the fundamentals of database modeling and design, the languages and facilities provided by database management systems, and some techniques for implementing and administering database systems.

Course Outcomes

Upon successful completion of this course, students will be able to:

1. Describe the features of a Database Management System (DBMS) and its use within an organization.
2. Trace the evolution of the DBMS models and implementations from file based systems to legacy products to current technologies such as relational models.
3. Analyze business problems and model the database solution using entity relationship diagrams.
4. Transform entity-relationship diagrams into a logical design of a database system.
5. Apply the process of normalization to remove data anomalies.
6. Analyze the development of a database application from the database structure to the user interface.
7. Apply SQL commands to create, update, delete, and query a relational database.
8. Create users and roles in a relational database.
9. Apply active database concepts such as triggers in a relational database
10. Design and build a database to support an application.
11. Construct a user interface to create, delete, update, and query database records.
12. Analyze business and database structures and demonstrate data warehousing techniques.
13. Describe and apply Internet Database concepts and tools, such as xml.
14. Analyze databases and infer a distributed database design.