This course introduces storage of various kinds and formats of data. You will use standard SQL to demonstrate query capabilities provided by database management systems. The course will further cover data-related topics: data presentation, security (access and encryption), transaction management, and administration (backup, disaster recovery, and performance tuning) and will address advanced topics such as data warehousing, data mining, and distributed databases.

This course is worth 3 competency units.

Introduction

Watch the following video for an introduction to this course:

Note: To download this video, right-click the following link and choose "Save as...": download video.

Launch Your Course!

You will read and complete all chapter exercises for all chapters but the ones marked "optional," though you are free to use the entire text as a reference and means of gaining additional, or deeper competency. A course study guide is also provided for you to help you orient and focus your studies.

After you have had a chance to peruse and/or use the resources in the Course Resources section, launch your course here.

Launch Course

Course Resources

Course Instructor Assistance
As you prepare to successfully demonstrate competency in this subject, remember that course instructors, subject-matter experts, stand ready to help you reach your educational goals; they are excited to hear from you and eager to work with you, and successful students report that working with a course instructor is the key to their success.

The course instructors have created the following video to orient you to the course and its resources:

Note: To download this video, right-click the following link and choose "Save as...": download video.

Course Study Guide
This study guide is organized by competency; you won't necessarily find the information for the

items in order as you work through it, so fill it out as you go through the assigned chapters. The study guide is a pretty explicit document orienting you to the most important aspects of the course, and in which areas you need to focus the most attention. Use this study guide to help you orient and focus your studies as you work through the chapters and chapter exercises. It is also found on the Introduction page of the uCertify platform.

- Study Guide

Course Materials

All of the course content will be found within the following uCertify course (You may be prompted to log in to the WGU student portal to access the resources.):

- Data Management for Programmers

Note: Once you have entered the uCertify course environment, it is not necessary to come back to this environment until you are ready to take your final assessment.

The content hosted on the uCertify platform is from the following textbook:

- Begg, C. & Connolly, T. (2009). *Database Systems: A Practical Approach to Design,*

    Implementation, and Management (5th ed.) ISBN-10: 0321523067.

Note: This e-text is available to you as part of your program tuition and fees, but you may purchase hard copies at your own expense through a retailer of your choice. If you choose to do so, please use the ISBN listed to ensure that you receive the correct edition.

WGU Writing Center

If you need help with any part of the writing or revision process, contact the Center for Writing Excellence (CWE). Whatever your needs—writing anxiety, grammar, general college writing concerns, or even ESL language-related writing issues—the CWE is available to help you. The CWE offers personalized individual sessions and weekly group webinars. For an appointment, please e-mail writingcenter@wgu.edu.

The WGU Library

The WGU Library is available online to WGU students 24 hours a day.

Pacing Guide

The pacing guide suggests a weekly structure to pace your completion of learning activities. It is provided as a suggestion and does not represent a mandatory schedule. Follow the pacing guide carefully to complete the course in the suggested timeframe.

Week 1

- Lesson 2: Database Environment

- Lesson 3: Optional: Database [Architectures](#) and the Web
- Lesson 4: The Relational Model
- Lesson 5: Relational Algebra and Relational Calculus
- Lesson 6: SQL: Data Manipulation
- Lesson 7: SQL: Data Definition

Week 2

- Lesson 8: Advanced SQL
- Lesson 9: Object-Relational DBMSs
- Lesson 10: Database System Development Lifecycle
- Lesson 11: Database Analysis and the DreamHome Case Study
- Lesson 12: Entity-Relationship Modeling
- Lesson 13: Enhanced Entity-Relationship Modeling

Week 3

- Lesson 14: Optional: Normalization
- Lesson 15: Optional: Advanced Normalization
- Lesson 16: Methodology-Conceptual Database Design
- Lesson 17: Methodology-Logical Database Design for the Relational Model
- Lesson 18: Methodology-Physical Database Design for Relational Databases
- Lesson 19: Optional: Methodology-Monitoring and Tuning the Operational System

Week 4

- Lesson 20: Security and Administration
- Lesson 21: Optional: Professional, Legal, and Ethical Issues in Data Management
- Lesson 22: Transaction Management
- Lesson 23: Query Processing
- Lesson 25: Distributed DBMSs-Advanced Concepts
- Lesson 26: Replication and Mobile Databases
- Lesson 27: Object-Oriented DBMSs-Concepts and Design

Week 5

- Lesson 28: Optional: Object-Oriented DBMSs-Standards and Systems
- Lesson 29: Web Technology and DBMSs
- Lesson 30: Semistructured Data and XML
- Lesson 31: Optional: Data Warehousing Concepts
- Lesson 32: Data Warehousing Design
- Lesson 33: OLAP
- Lesson 34: Data Mining

Week 6

- Take the Preassessment
- Complete Objective Assessment

Note: This pacing guide does not replace the course. Please continue to refer to course for a comprehensive list of the resource and activities.

Before You Take the Assessment...

One of the many things that makes WGU unique is its competency-based education model. If you know the material, all you have to do is prove it by passing the exam. If you can do this, you can accelerate the receipt of your degree.

To make sure you have the best chance possible to pass the exam on your first attempt, the following steps should be completed successfully before you take it:

1. Read through this entire course, view the "Getting Started" video at the beginning of this course, and make sure you understand what is expected in order to pass the objective assessment.
2. Take the preassessment in this course to identify your current skill-level and move forward in the uCertify resource accordingly.
3. Complete all assigned reading and exercises in the uCertify platform.
4. Fill out and understand everything in the the study guide.
5. Take the preassessment again, striving for a score of 85% or higher. Use the results to determine which areas you still need to review, and reach out to the course instructors with any questions you have.

If you have completed the steps above and you feel comfortable with all of the concepts presented, you are most likely ready to attempt the exam.

If you fail your first attempt, you will be required to contact the course instructor to see what went wrong and how you can prepare to ensure a successful second attempt. After determining you are ready, your course instructor will approve your request once to make another exam attempt.