



This course supports the assessment for Data Management - Applications. The course covers 6 competencies and represents 4 competency units.

## Introduction

### Overview

This course covers conceptual data modeling and provides an introduction to MySQL. Students will learn how to create simple to complex SELECT queries including subqueries and joins, and will also learn how to use SQL to update and delete data. Topics covered in this course include exposure to MySQL; developing physical schemas; creating and modifying databases, tables, views, foreign keys/primary keys (FKs/PKs), and indexes; populating tables; and developing simple Select-From-Where (SFW) queries to complex 3+ table join queries.

### Getting Started

Welcome to Data Management - Applications! The prerequisite for this course is Data Management - Foundations, and you should have a basic understanding of data, databases, and SQL prior to this course. You will learn through the uCertify learning resource that provides readings, videos, quizzes, and flashcards, all to help you prepare to succeed in the assessments: one objective assessment and one performance assessment. Use the uCertify Study Planner for a pacing guideline to complete the learning material within five weeks.

### Competencies

This course provides guidance to help you demonstrate the following 6 competencies:

- **Competency 4018.1.1: Conceptual Models to Physical Schemas**  
The graduate creates conceptual data models and translates them into physical schemas.
- **Competency 4018.1.2: Create Databases**  
The graduate creates databases utilizing SQL Data Definition Language (DDL) in MySQL environment.
- **Competency 4018.1.3: Create/Modify Tables & Views**  
The graduate writes code to create and modify tables and views employing SQL Data Definition Language (DDL) in MySQL environment.
- **Competency 4018.1.4: Create Primary Keys/Foreign Keys and Indexes**  
The graduate writes code to create and modify Primary Keys (PKs) and Foreign Keys (FKs) and Indexes with SQL Data Definition Language (DDL) in MySQL environment.
- **Competency 4018.1.5: Populate Tables**  
The graduate populates tables with insert, update, and delete using Data Manipulation Language (DML) in MySQL environment.
- **Competency 4018.1.6: Create Simple & Complex Queries**  
The graduate creates simple Select-From-Where (SFW) and complex 3+ table join queries with Data Manipulation Language (DML) in MySQL environment.



## **Course Instructor Assistance**

As you prepare to demonstrate competency in this subject, remember that course instructors stand ready to help you reach your educational goals. As subject matter experts, mentors enjoy and take pride in helping students become reflective learners, problem solvers, and critical thinkers. Course instructors are excited to hear from you and eager to work with you.

Successful students report that working with a course instructor is the key to their success. Course instructors are able to share tips on approaches, tools, and skills that can help you apply the content you're studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency. Even if things don't work out on your first try, course instructors act as a support system to guide you through the revision process. You should expect to work with course instructors for the duration of your coursework, and you are encouraged to contact them as soon as you begin. Course instructors are fully committed to your success!

## **Preparing for Success**

The information in this section is provided to detail the resources available for you to use as you complete this course.

### **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 1: Conceptual Models
- Lesson 2: ER-Modeling

#### **Week 2**

- Lesson 2: ER-Modeling
- Lesson 3: Basic SQL

#### **Week 3**

- Lesson 3: Basic SQL
- Lesson 4: Advanced SQL

#### **Week 4**

- Lesson 4: Advanced SQL
- Lesson 5: Indexes



## Week 5

- Lesson 5: Indexes
- Lesson 6: Normalization
- Begin Performance Assessment

## Week 6 & 7

- Complete Performance Assessment

## Week 8

- Complete Objective Assessment

## Learning Resources

The learning materials and activities for this course are found with in [uCertify's Data Management Applications](#).

The following textbook is hosted on the uCertify platform:

- Coronel, C., & Morris, S. (2017). *Database systems: Design, implementation, and management* (12th ed.). Boston, MA: Cengage Learning. ISBN: 978-1-305-62748-2.

*Note: This e-text is available to you as part of your program tuition and fees, but you may purchase a hard copy 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.*

## Pre-Assessment

Begin by completing the pre-assessment on your assessment tab. Review your results to identify topics on which to focus your study as you move through this course.

## Data Management - Applications

If you have taken your pre-assessment and been shown to already have sufficient competency for specific topics, then you have the choice to skip over those topics. Otherwise, going through the course from beginning to end is beneficial as it builds on itself to more and more complex material. In other words, if this material is generally new to you from the start, your best bet is to start at lesson 1, complete all the practice included, and work your way through to the end.

Good luck, ask your course instructor any questions you have, and enjoy!

## Conceptual Models to Physical Schema

This topic addresses the following competencies:

- **Competency 4018.1.1: Conceptual Models to Physical Schemas**  
The graduate creates conceptual data models and translates them into physical schemas.
- **Competency 4018.1.4: Create Primary Keys/Foreign Keys and Indexes**  
The graduate writes code to create and modify Primary Keys (PKs) and Foreign Keys (FKs) and indexes with SQL Data Definition Language (DDL) in MySQL environment.



## uCertify Lesson 1

Go to uCertify and complete [Lesson 1: Conceptual Models](#), including each lab. Complete the Review Questions at the end of the reading to check your understanding.

### Lesson 1 Practice

Practice with the flashcards in [Lesson 1: Conceptual Models](#). When you are comfortable with the vocabulary, complete the Lesson 1 Quiz for further reinforcement.

## uCertify Lesson 2

Go to uCertify and complete [Lesson 2: ER-Modeling](#), including each lab. Complete the Review Questions at the end of the reading to check your understanding.

### Lesson 2 Practice

Practice with the flashcards in [Lesson 2: ER-Modeling](#). When you are comfortable with the vocabulary, complete the Lesson 2 Quiz for further reinforcement.

## Normalization

This topic addresses the following competency:

- **Competency 4017.1.5 Normalization**

The graduate demonstrates appropriate strategies to normalize data.

## uCertify Lesson 6

Go to uCertify and read [Lesson 6: Normalization of Database Tables](#). Complete the Review Questions at the end of the reading to check your understanding.

### Lesson 6 Practice

Practice with the flashcards in [Lesson 6: Normalization of Database Tables](#). When you are comfortable with the vocabulary, complete the Lesson 5 Quiz for further reinforcement.

## Basic SQL

This topic addresses the following competencies:

- **Competency 4018.1.2: Create Databases**

The graduate creates databases utilizing SQL Data Definition Language (DDL) in MySQL environment.

- **Competency 4018.1.3: Create/Modify Tables & Views**

The graduate writes code to create and modify tables and views employing SQL Data Definition Language (DDL) in MySQL environment.

- **Competency 4018.1.4: Create Primary Keys/Foreign Keys and Indexes**

The graduate writes code to create and modify Primary Keys (PKs) and Foreign Keys (FKs) and Indexes with SQL Data Definition Language (DDL) in MySQL environment.

- **Competency 4018.1.5: Populate Tables**

The graduate populates tables with insert, update, and delete using Data Manipulation Language (DML) in MySQL environment.

- **Competency 4018.1.6: Create Simple & Complex Queries**



The graduate creates simple Select-From-Where (SFW) and complex 3+ table join queries with Data Manipulation Language (DML) in MySQL environment.

### **uCertify Lesson 3**

Go to uCertify and complete [Lesson 3: Basic SQL](#), including each lab. Complete the Review Questions at the end of the reading to check your understanding.

#### **Lesson 3 Practice**

Practice with the flashcards in [Lesson 3: Basic SQL](#). When you are comfortable with the vocabulary, complete the Lesson 3 Quiz for further reinforcement.

## **Advanced SQL**

This topic addresses the following competencies:

- **Competency 4018.1.3: Create/Modify Tables & Views**

The graduate writes code to create and modify tables and views employing SQL Data Definition Language (DDL) in MySQL environment.

- **Competency 4018.1.6: Create Simple & Complex Queries**

The graduate creates simple Select-From-Where (SFW) and complex 3+ table join queries with Data Manipulation Language (DML) in MySQL environment.

### **uCertify Lesson 4**

Go to uCertify and complete [Lesson 4: Advanced SQL](#), including each lab. Complete the Review Questions at the end of the reading to check your understanding.

#### **Lesson 4 Practice**

Practice with the flashcards in [Lesson 4: Advanced SQL](#). When you are comfortable with the vocabulary, complete the Lesson 4 Quiz for further reinforcement.

## **Indexes**

This topic addresses the following competency:

- **Competency 4018.1.4: Create Primary Keys/Foreign Keys and Indexes**

The graduate writes code to create and modify Primary Keys (PKs) and Foreign Keys (FKs) and Indexes with SQL Data Definition Language (DDL) in MySQL environment.

### **uCertify Lesson 5**

Go to uCertify and complete [Lesson 5: Indexes](#), including each lab. Complete the Review Questions at the end of the reading to check your understanding.

#### **Lesson 5 Practice**



Practice with the flashcards in [Lesson 5: Indexes](#). When you are comfortable with the vocabulary, complete the Lesson 5 Quiz for further reinforcement.

## Final Steps

Congratulations on completing the activities in this course! You are now prepared to complete the associated assessment. If you have not already been directed to complete it, schedule and complete the assessment now.

### Performance Assessment

To make sure you have the best chance possible to pass the performance assessment on your first attempt, the following steps should be successfully completed first:

1. You have read and studied all 5 lessons within uCertify.
2. You have viewed all of the integrated video modules.
3. You have applied your knowledge by working through the exercises and labs, studying with the flash cards, and testing yourself with the quizzes within uCertify. *Note: You can also have made your own flash cards and have memorized them.*

If your task is returned for revision, reach out to your Course Instructor team at [cmdatabase@wgu.edu](mailto:cmdatabase@wgu.edu) for assistance.

### Objective Assessment

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

1. You have completed and submitted the performance assessment.
2. Complete the pre-assessment with a score of 80% or better.

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.