**Using Databases with Python** is the fourth course in the specialization Python for Everybody. It covers Chapters 14 and 15 of the textbook Python for Informatics, plus an additional unit on object oriented programming. You should be familiar with the material covered in Chapters 1-13 before beginning this course.

Most units will have a quiz and one or more required programming assignments. (There is no programming assignment for Unit 1 and no quiz for Unit 5.) You must complete all of the quizzes and assignments to pass the course. To pass a quiz, you must get 80% correct. There is no partial credit on programming assignments. You can track your progress on the Assignments page.

The class is five weeks long, with suggested deadlines each week to help you stay on track. These weekly deadlines are not mandatory, and you can turn them off from the Course Settings options at the bottom of the Home page.

Students who want to earn a certificate will be asked to verify their identity each time they submit a quiz or assignment. If you do not plan to earn a certificate, you can also turn off these reminders from Course Settings. But if you want to get a certificate later, you should not turn them off.

You must complete all course requirements by the end of the last week to pass the course. If you have not completed the course, you can enroll in the next session and your work will be carried over. New sessions begin each month.

# Syllabus

## Unit 1

**Introduction**

- Welcome Video

- Textbook and Slides

**Object Oriented Programming**

- Lecture Materials

- Quiz: Object Oriented Programming

- Bonus Interview: Bertrand Meyer

## Unit 2

**Basic Structured Query Language**

- Lecture Materials

- Quiz: Quiz: Single-Table SQL

- Assignment: Our First Database

- Demo: Email Database

- Assignment: Counting Email in a Database

- Bonus Interview: Elizabeth Fong

# Unit 3

**Data Models and Relational SQL**

- Lecture Materials

- Quiz: Multi-Table Relational SQL

- Demo: Multi-Table Tracks

- Assignment: Multi-Table Database - Tracks

- Bonus Interview: Niklas Wirth

# Unit 4

**Many-to-Many Relationships in SQL**

- Lecture Materials

- Quiz: Many-to-Many Relationships and Python

- Demo: Many-to-Many Roster

- Assignment: Many Students in Many Courses

- Bonus Interview: Andrew Tannenbaum

# Unit 5

**Databases and Visualization**

- Lecture Materials

- Demo: GeoCoding API

- Assignment: Databases and Visualization

- Bonus Interview: Richard Stallman

- Bonus Interview: Brian Behlendor

# A note about Specializations…

A Coursera Specialization is a series of courses that are designed to build on each other and culminate in a Capstone project. All courses except the Capstone are free, but to receive a Specialization certificate, you must pay for and earn a verified certificate in each of the courses. The Capstone is only open to students who have completed and received certificates in all of the other courses.

The University of Michigan offers the specializations Python for Everybody and Web Design for Everybody. Python for Everybody is based on the free textbook Python for Informatics, and includes the following courses:

· Getting Started with Python Chapters 1-5

· Python Data Structures – Chapters 6-10

· Using Python to Access Web Data – Chapters 11-13

· Using Databases with Python – Chapters 14-15 (this course)

Students with a **Verified Certificate** in the 10-week course Programming for Everybody (PR4E) can start at the third course if they want to complete the specialization.