

Certified Data Science Practitioner (CDSP) (Exam DSP-110) - DRAFT

Course Number: CNX0011

Course Length: 5 days

Overview:

For a business to thrive in our data-driven world, it must treat data as one of its most important assets. Data is crucial for understanding where the business is and where it's headed. Not only can data reveal insights, it can also inform—by guiding decisions and influencing day-to-day operations. This calls for a robust workforce of professionals who can analyze, understand, manipulate, and present data within an effective and repeatable process framework. In other words, the business world needs data science practitioners. This course will enable you to bring value to the business by putting data science concepts into practice. **This course includes hands on activities for each topic area. For a detailed outline including activities, hardware requirements and datasets please contact info@certnexus.com**

Course Objectives:

In this course, you will implement data science techniques in order to address business issues.

You will:

- Use data science principles to address business issues.
- Apply the Extract, Transform, and Load (ETL) process to prepare datasets.
- Use multiple techniques to analyze data and extract valuable insights.
- Prepare to train machine learning models.
- Train, tune, and evaluate classification models.
- Train, tune, and evaluate regression and forecasting models.
- Train, tune, and evaluate clustering models.
- Finalize a data science project by presenting models to an audience, putting models into production, and monitoring model performance.

Target Student:

This course is designed for business professionals who leverage data to address business issues. The typical student in this course will have several years of experience with computing technology, including some aptitude in computer programming.

However, there is not necessarily a single organizational role that this course targets. A prospective student might be a programmer looking to expand their knowledge of how to guide business decisions by collecting, wrangling, analyzing, and manipulating data through code; or a data analyst with a background in applied math and statistics who wants to take their skills to the next level, or any number of other data-driven situations.

Ultimately, the target student is someone who wants to learn how to more effectively extract insights from their work and leverage that insight in addressing business issues, thereby bringing greater value to the business.

This course is also designed to assist students in preparing for the CertNexus® Certified Data Science Practitioner (CDSP) (Exam DSP-110) certification.

Prerequisites:

To ensure your success in this course, you should have at least a high-level understanding of fundamental data science concepts, including, but not limited to: types of data, data science roles, the overall data science lifecycle, and the benefits and challenges of data science. You can obtain this level of knowledge by taking the CertNexus DSBIZ™ (Exam DSZ-110) course.

You should also have experience working with databases, querying languages like SQL, and high-level programming languages like Python. You can obtain this level of skills and knowledge by taking the following Logical Operations courses:

- Database Design: A Modern Approach
- SQL Querying: Fundamentals (Second Edition)
- SQL Querying: Advanced (Second Edition)
- Introduction to Programming with Python
- Advanced Programming Techniques with Python
- Using Data Science Tools in Python

Course Content

Lesson 1: Addressing Business Issues with Data Science

Topic A: Initiate a Data Science Project

Topic B: Formulate a Data Science Problem

Lesson 2: Extracting, Transforming, and Loading Data

Topic A: Extract Data

Topic B: Transform Data

Topic C: Load Data

Lesson 3: Analyzing Data

Topic A: Examine Data

Topic B: Explore the Underlying Distribution of Data

Topic C: Use Visualizations to Analyze Data

Topic D: Preprocess Data

Lesson 4: Preparing to Train a Machine Learning Model

Topic A: Identify Machine Learning Concepts

Topic B: Test a Hypothesis

Lesson 5: Developing Classification Models

Topic A: Train and Tune Classification Models

Topic B: Evaluate Classification Models

Lesson 6: Developing Regression and Forecasting Models

Topic A: Train and Tune Regression and Forecasting Models

Topic B: Evaluate Regression and Forecasting Models

Lesson 7: Developing Clustering Models

Topic A: Train and Tune Clustering Models

Topic B: Evaluate Clustering Models

Lesson 8: Finalizing a Data Science Project

Topic A: Communicate Results to Stakeholders

Topic B: Demonstrate a Model in a Web App

Topic C: Implement and Test Production Pipelines

Appendix A: Mapping Course Content to CertNexus® Certified Data Science Practitioner (CDSP) (Exam DSP-110)