



Business Analytics

(formerly Data Foundations)

Nanodegree Syllabus

Master data fundamentals
applicable to any industry

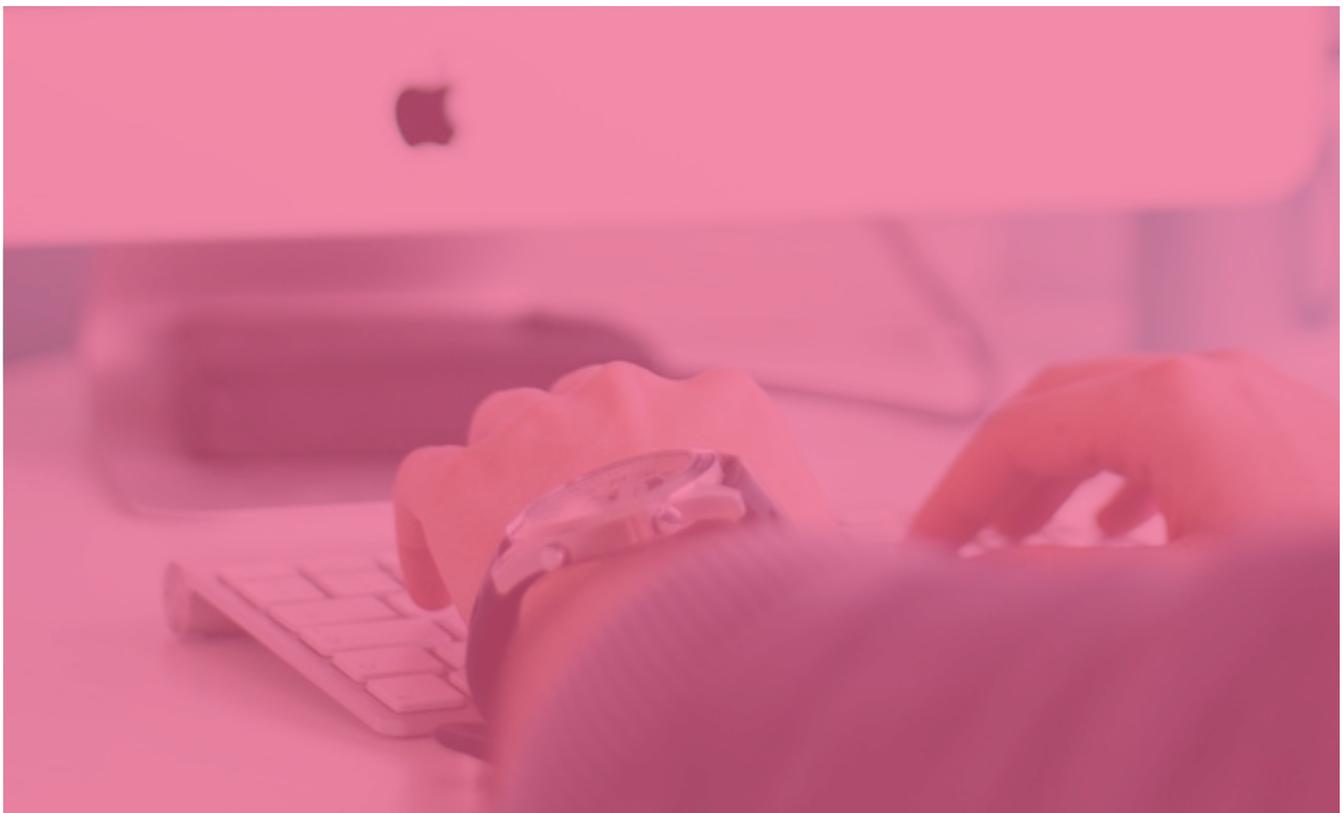


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Table of Contents

Before You Start	3
Contact Info	3
Nanodegree Program Info	3
Intro Project: Interpret a Data Visualization	4
Project 1: Analyze Survey Data	4
Project 2: Query Digital Music Store Database	5
Project 3: Build Data Dashboards	6



Business Analytics



Before You Start

Prerequisites: There are no prerequisites for this program, aside from basic computer skills. You should be comfortable opening files, folders, and applications, and performing operations like copy and paste.

Contact Info

While going through the program, if you have questions about anything, you can reach us at enterprise-support@udacity.com. For help from Udacity Mentors and your peers, visit the Udacity Classroom.

Nanodegree Program Info

This program is perfect for beginners. You'll learn data analysis skills and tools that will help you throughout your career, whether you're in engineering, sales, marketing, operations, etc. You'll learn to use Excel, SQL, and Tableau to manipulate, analyze, and visualize data with the end goal of making better, data-informed decisions. This program is also great preparation for more advanced programs, such as the Data Analyst or Business Analyst Nanodegree programs.

TECHNICAL REQUIREMENTS:

REQUIRED SOFTWARE AND SOFTWARE VERSION: Spreadsheet tool, Tableau public, DB Browser for SQLite

LENGTH OF PROGRAM*: 4 months

FREQUENCY OF CLASSES: Self-paced

INSTRUCTIONAL TOOLS AVAILABLE: Video lectures, Text instructions, Quizzes, Study Groups, Knowledge, Project Reviews

*This is a self-paced program and the length is an estimation of total hours the average student may take to complete all required coursework, including lecture and project time. Actual hours may vary.

Intro Project: Interpret a Data Visualization

In the lessons leading to your first project, you will get to know your instructors and learn how data is being applied in many industries. You'll also learn about course structure, navigation, learning resources, deadlines, projects, and everything that will help you succeed in this course.

You will then get to work on your first project, where you will draw insights from interactive dashboards. A large part of working with data is being able to interpret data visualizations and explain your insights to others. This project will build your intuition on working with data dashboards, while also showing you the types of beautiful visualizations you will be able to produce by the end of this program!

Project 1: Analyze Survey Data

In this project, you will analyze a real dataset about current Udacity students. You will need to decide how to work with missing and incorrectly inputted data to best convey the characteristics of Udacity students. You will use spreadsheets to analyze and summarize the data using statistics and data visualizations. You will then communicate your key findings in a professional manner.

By the end of this project, you will be able to:

- Calculate summary statistics using spreadsheets.
- Create data visualizations using spreadsheets.
- Ask questions and answer them using data.
- Work with real-world data that has missing and incorrectly inputted values.

Supporting Lesson Content: Introduction to Data Analysis

Lesson Title	Learning Outcomes
DESCRIPTIVE STATISTICS I	<ul style="list-style-type: none">• Learn data types, measures of center, and the basics of mathematical notation.
DESCRIPTIVE STATISTICS II	<ul style="list-style-type: none">• Learn a common visual method for quantitative data, measures of spread, and the difference between descriptive and inferential statistics.

Project 1: Analyze Survey Data (Continued)

Lesson Title	Learning Outcomes
SPREADSHEETS: GETTING STARTED	<ul style="list-style-type: none">• Learn basic functionality for spreadsheet software.• Learn cell referencing and menu shortcuts.
SPREADSHEETS: MANIPULATE DATA	<ul style="list-style-type: none">• Learn to sort and filter data.• Learn to use text and math functions.• Learn to split columns and remove duplicates.
SPREADSHEETS: ANALYZE DATA	<ul style="list-style-type: none">• Learn to use aggregation and conditional functions to summarize data.• Learn to use pivot tables and lookup functions.
SPREADSHEETS: VISUALIZE DATA	<ul style="list-style-type: none">• Learn to build data visualizations for quantitative and categorical data.• Learn to create pie, bar, line, scatter, histogram, and boxplot charts.• Learn to build professional presentations.

Project 2: Query Digital Music Store Database

In this project, you will query a digital music store database which holds information regarding the store's media, employees, and customers. You will use the database to help the store gain an understanding of the types of music that are purchased, where customers live, and how the company might optimize their business practices.

By the end of this project, you will be able to:

- Write SQL to query a single table.
- Write SQL to query multiple tables.
- Ask a question that requires data from multiple places, join the data together, and answer the question.
- Install SQL on your own machine, upload a database, ask complex questions about the data in a database, and query the database to answer those questions.

Project 2: Query Digital Music Store Database (Continued)

Supporting Lesson Content: SQL for Data Analysis

Lesson Title	Learning Outcomes
BASIC SQL	<ul style="list-style-type: none">Learn to write common SQL commands including SELECT, FROM, and WHERE, as well as corresponding logical operators.
SQL JOINS	<ul style="list-style-type: none">Learn to write JOINS in SQL, as you are now able to combine data from multiple sources to answer more complex business questions.
SQL AGGREGATIONS	<ul style="list-style-type: none">Learn to write common aggregations in SQL including COUNT, SUM, MIN, and MAX.Learn to write CASE and DATE functions, as well as work with NULL values.

Project 3: Build Data Dashboards

Sharing insights is an integral part of working with data. In this project, you'll build interactive dashboards with Tableau to tell stories from data. You'll use a dataset of flight delays in the US to visualize the quality of airlines and airports, find the best times to fly, and more. These types of visualizations help guide decision making to reach the best outcomes.

Supporting Lesson Content: Data Visualization with Tableau

Lesson Title	Learning Outcomes
DATA VISUALIZATION FUNDAMENTALS	<ul style="list-style-type: none">Learn to evaluate the quality of data visualizations and build high quality visualizations.
DESIGN PRINCIPLES	<ul style="list-style-type: none">Learn to implement the best design practices, and to use the most appropriate chart for a particular situation.

Project 3: Build Data Dashboards (Continued)

Lesson Title	Learning Outcomes
CREATING VISUALIZATIONS IN TABLEAU	<ul style="list-style-type: none">• Learn to use Tableau to build data visualizations.• Learn to use data hierarchies, filters, groups, sets, and calculated fields.• Learn to build maps.
TELLING STORIES WITH TABLEAU	<ul style="list-style-type: none">• Learn to build interactive Tableau dashboards.• Learn to tell impactful stories using data.



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