

Student Handbook & Syllabus

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[Introduction](#)

[What is a nanodegree?](#)

[Why Take This Nanodegree?](#)

[Prerequisites and Requirements](#)

[Minimum Requirements](#)

[What happens after I enroll?](#)

[Readiness Assessment](#)

[Supporting Courses](#)

[Project Submission and Graduation](#)

[How do I maintain good standing in the program?](#)

[What kind of support do I get in the nanodegree?](#)

[Community Forum](#)

[Events and Google+ Communities](#)

[Office Hours](#)

[Career Development Events](#)

[One-on-one Appointments](#)

[How does enrollment and payment work?](#)

[What is the payment policy?](#)

[What is the cancellation/refund policy?](#)

[Honor Code](#)

[Nanodegree Program](#)

[Project Submissions](#)

[Community Guidelines](#)

[Nanodegree Structure](#)

[Predict the New York City Subway Ridership](#)

[Wrangle OpenStreetMaps Data](#)

[Explore, Summarize, and Discover Interesting Insights from Datasets](#)

[Identify Fraud from the Enron Email Dataset](#)

[Tell Stories with Data Visualization](#)

Introduction

Welcome to Udacity's Data Analyst Nanodegree program! Please read this document carefully for an overview of what to expect in the program, as well as terms and conditions.

This Student Handbook is subject to revisions, at the sole discretion of Udacity.

What is a nanodegree?

A nanodegree consists of a series of courses and projects designed to help you develop job-relevant skills and build a portfolio. Udacity created the Data Analyst Nanodegree through close work with industry partners, who are hiring data analysts, and with industry experts.

A nanodegree is a big commitment. You'll have a timeline to stick to that will require you to work about 10 hours each week on the program. To get support through this process, you'll interact with other students and the Udacity Coach team in the forum for the program (Piazza), and you'll attend community events like office hours.

Since it's also important to showcase the skills you develop, you will have the option to attend career development events, where you will learn how to market your new skills so you can advance your career.

Why Take This Nanodegree?

The Data Analyst Nanodegree is designed to prepare you for a career in data science. As a Data Analyst, you will be responsible for obtaining, analyzing, and effectively reporting on data insights ranging from business metrics to user behavior and product performance. With our industry partners, we've carefully crafted the most efficient set of projects and skills training to guide you along the way.

In this nanodegree program you will learn to:

- Wrangle, extract, transform, and load data from various databases, formats, and data sources.
- Use exploratory data analysis techniques to identify meaningful relationships, patterns, or trends from complex data sets.

- Classify unlabeled data or predict into the future with applied statistics and machine learning algorithms.
- Communicate data analysis and findings well through effective data visualizations.

Prerequisites and Requirements

To make sure you're ready for this nanodegree, take the [Readiness Assessment](#) in the classroom. For more information about prerequisites, please read on.

Minimum Requirements

1. You are self-driven, motivated to learn, and interested in data science. Participation in this program requires consistently meeting the deadlines for your cohort and devoting at least 10 hours per week to your work.
2. You can communicate fluently and professionally in written and spoken English.
3. You have a strong grasp of descriptive and inferential statistics.
4. You have Python programming experience.
5. You have a strong understanding of programming concepts, such as variables, functions, loops, and basic data structures, like lists and dictionaries.
6. You have access to a computer with a broadband connection, on which you'll install a professional code/text editor (ie. [Sublime Text](#) or [Atom](#)).
7. You can independently solve and describe your solution to a math or programming problem.
8. You are willing to contribute to the success of the program, including collaborating with fellow students and giving us feedback on how we can improve.

Please also see the [Technology Requirements](#) for using Udacity.

What happens after I enroll?

Readiness Assessment

Before starting the course material and projects for the program, students will complete a short [Readiness Assessment](#) to help them determine whether or not they are prepared for the nanodegree.

If a student's responses indicate that they are not prepared for the nanodegree, they will be encouraged to enroll in a prerequisite course and/or view the course materials for free. The student can come back to enroll when ready during the open enrollment period of a later month.

Supporting Courses

The Data Analyst Nanodegree is driven by a Project Portfolio, a collection of 5 projects that showcases the student's work. To prepare for these projects, students will work through supporting courses. If students already have the skills necessary to complete the projects, they do not have to take the supporting courses.

The supporting courses for this nanodegree are:

- [Intro to Data Science](#)
- [Data Wrangling with MongoDB](#)
- [Data Analysis with R](#)
- [Intro to Machine Learning](#)
- [Data Visualization](#)

Program Timeline and Project Portfolio

Graduating from the nanodegree requires that students submit work that meets Udacity's specifications for 6 particular projects. For more information about project submission and graduation, please see the [section below](#).

To remain a part of his or her current cohort, a student will need to complete the projects in the nanodegree by certain dates. The timeline for each cohort is shown below.

Projects	Deadlines for Cohort #1
P1: Analyzing the NYC Subway Dataset	January 9, 2015
P2: Wrangle OpenStreetMaps Data	March 6, 2015
P3: Explore and Summarize Data	May 1, 2015
P4: Identifying Fraud from Enron Email	July 24, 2015
P5: Make Effective Data Visualizations	October 16, 2015

For more detailed information about each project, please refer to the [Nanodegree Structure](#) section.

Project Submission and Graduation

Students will submit each project according to the evaluation and submission instructions outlined for it. Each project will be assessed within two weeks of submission. Once a student's project has met the specifications of its rubric, the student may be required to do a verification interview with a

Udacity Coach to verify that the project in question represents their own work and/or correctly cites all sources and reasons for using others' code in any part of their submission.

To earn a Verified Nanodegree Certificate, the student must:

- Successfully complete all projects in the Project Portfolio for the nanodegree, earning a "Meets Specifications" or above for all projects
- Schedule and pass any requested verification interviews
- Update their LinkedIn profile with projects and career goals
- Maintain [good standing](#) for the duration of the program
- Stay in the program past the Free Trial window

How do I maintain good standing in the program?

To maintain good standing and stay in the program, students are expected to meet the following criteria:

- Participate meaningfully and constructively in forums and actively engage with fellow students and Udacity Coaches
- If asked, resubmit projects within 7 days of feedback
- If asked, schedule an exit interview within 7 days to have the projects verified over video chat
- Abide by the [Udacity Honor Code](#), the [Terms of Service](#), and the terms outlined in this Data Analyst Nanodegree Student Handbook

The requirements above are designed to help students graduate from the Data Analyst Nanodegree Program within eight months of enrollment or earlier. Students who do not maintain good standing will be asked to leave the program.

What kind of support do I get in the nanodegree?

Community Forum

Each nanodegree cohort will have its own Piazza page to serve as a forum where students can ask and answer each other's questions about the projects, program logistics, and course material. Udacity Coaches will moderate and contribute to this forum each day as well. Students will be invited to the forum within 24 hours of enrolling. Please read the Piazza Best Practices document to learn how to best make use of and contribute to the forum.

Students are encouraged to form smaller study groups with other members of their cohort. Udacity will provide suggestions for how to organize these groups, but students will have the freedom to connect with one another in other ways as well.

Events and Google+ Communities

Nanodegree students will have access to content, community, and career events to enrich their learning experience. These events will happen through Google Hangouts On Air, and students will need to be part of their cohort's Google+ Community in order to participate. The link to the Google+ Community for the Data Analyst Nanodegree is [here](#). To join this community, each student needs to have or create a Google+ account under his or her full name. For more information about how to attend and participate in Hangouts On Air, please see the Participating in Hangouts on Air document, available through Piazza's Resources page.

Office Hours

Office hours are live, 45-minute sessions in which Udacity instructors will be available to answer students' questions about projects, course material, and/or nanodegree program requirements. These sessions will occur several times per week over Google Hangouts On Air unless otherwise specified. You can access these events through your cohort's Google+ Community, and a recording of each session will be available afterward. The specific topics and projects that each session will focus on will be announced in advance.

The regular weekly schedule for office hours will be announced shortly. For more information about how to attend office hours, please see the Office Hours Calendar document, available for download in Piazza's Resources section.

Career Development Events

Career development, in addition to technical growth, is a very important part of the nanodegree program. Udacity will offer monthly career development events over Google Hangouts On Air for nanodegree students to attend. Please see the Career Activities Calendar (available for download in Piazza's Resources section) for a list of upcoming events.

One-on-one Appointments

The Udacity Coach team will be available for one-on-one appointments on a first come, first served basis. The purpose of these meetings is to help answer in-depth content-related questions that you cannot get answers to elsewhere. You'll receive more info through Piazza about how to schedule appointments.

Please hold off on booking an appointment until you have a specific question that you are sure can't be addressed through other resources, such as Piazza or Office Hours. When scheduling appointments, you must adhere to the guidelines listed below. If you do not, your appointment request will be rejected.

Here are the guidelines:

1. Each student can make one appointment every 2 weeks. Please schedule your appointment at least 48 hours in advance.

2. When you make your appointment, you must include certain information in the Description section of the event. Since Coaches are currently being assigned to students based on their needs and Coaches' availability, it's important for us to understand what you want to work on. This is the information you will need to include when making an appointment:
 - Project or course content you'd like to discuss
 - Snippets of code (if any) for review
 - Link to GitHub (if applicable)
 - Questions for Coach (please limit this to 2 or 3 questions to make the most of your time with the Coach)
3. You may cancel your appointment up to 48 hours in advance. Any cancellation after that point may result in you not being able to make appointments for another 2 weeks.

How does enrollment and payment work?

Enrollment in the nanodegree program will be opened up for several days each month with a limited capacity. Once enrollment closes, you can sign up to be on the notification list to receive an email when the class opens up the next month.

What is the payment policy?

Students are required to enter their credit card information at the time of enrollment; however, students will not be charged for the first week (the Free Trial window) of their subscription. After the first week, students will automatically be charged a fee of **\$200 per month** for their nanodegree subscription.

What is the cancellation/refund policy?

If a student opts to cancel their enrollment within the one-week Free Trial window, they will not be charged, regardless of how far they have come in the program. **We strongly recommend that students complete the [Readiness Assessment](#) within the one-week Free Trial window to make sure that the nanodegree is a good fit for them.**

Students who cancel will no longer be charged the monthly subscription fee, effective the next billing cycle from the date of cancellation. Students who wish to cancel after the Free Trial expires will not be granted a refund for past month's subscription fees.

Honor Code

Nanodegree Program

- I will abide by the [Terms of Service](#), Student Handbook guidelines, and all components of the Honor Code set for Udacity Nanodegree participants.
- I will conduct myself with honor as part of the Udacity community.
- I understand that all decisions regarding participation, graduation, and awarding of verified certificates will be made by Udacity at its sole discretion.

Project Submissions

- I hereby confirm that all project submissions consist of my own work. Accordingly, I will document and cite the origins of any part(s) of my project submissions that were taken from websites, books, forums, blog posts, github repositories, or any other source and explain why I used them for any part of my submission. I understand that I may be asked to explain my work in a video call with a Udacity Coach before my nanodegree is conferred.

Community Guidelines

- I will help cultivate a positive, supportive learning environment
- I will communicate respectfully and considerately with all other nanodegree participants, Udacity Coaches, and Udacity representatives
- I will not share any content that is obscene, illicit, threatening, or discriminatory
- I will contribute constructively to discussions with fellow students
- I will notify a Udacity Coach immediately if I become aware of cheating or plagiarism by any nanodegree student

Nanodegree Structure

These are the projects you'll build and the classes that will prepare you to build each of the projects. You'll have access to all these in the Nanodegree:

Predict the New York City Subway Ridership

In this project, you will be exposed to and learn fundamental data science skills like data wrangling, applied statistics and machine learning, effective visualization, and working with big data using MapReduce. Specifically, you will pose a question about the New York City Subway and work with the subway ridership dataset to draw an interesting conclusion about the dataset itself.

Prepare for this project with: [Intro to Data Science](#)

Wrangle OpenStreetMaps Data

You will choose any area of the world in [Open Street Map](#) and use data munging techniques, such as assessing the quality of the data for validity, accuracy, completeness, consistency and uniformity, to clean the OpenStreetMap data for a part of the world that you care about.

Prepare for this project with: [Data Wrangling with MongoDB](#)

Explore, Summarize, and Discover Interesting Insights from Datasets

You will use R to apply exploratory data analysis techniques that you have to the project. You will practice understanding a single variable and relationships between multiple variables, and explore a selected data set for distributions, outliers, and anomalies.

Prepare for this project with: [Data Analysis with R](#)

Identify Fraud from the Enron Email Dataset

In this project, you will play detective, and put your machine learning skills to use by building an algorithm to identify Enron Employees who may have committed fraud based on the public Enron financial and email dataset.

Prepare for this project with: [Intro to Machine Learning](#)

Tell Stories with Data Visualization

For this project, you will create a data visualization from a data set that tells a story or allows a reader to explore trends or patterns. Your work will be a reflection of the theory and best practices of data visualization.

Prepare for this project with: [Data Visualization](#)