

Data Boot Camp Syllabus

Welcome to the Data boot camp!

Course Overview

The 24-week data boot camp is a challenging, part-time program that focuses on the practical technical skills needed to solve data problems. Throughout the course, you will gain proficiency in numerous marketable technologies, including Excel, Python, JavaScript, SQL databases, Tableau, and more. Additionally, you will leave with an impressive professional portfolio and the confidence to succeed in a data-driven economy.

There are no required prerequisites for this boot camp. However, you must have fundamental computer skills and feel comfortable using the internet.

Course Outcomes

By the time you graduate, you'll be able to:

- Employ statistical analysis to model, predict, and forecast trends.
- Build VBA scripts in Excel to automate manual processes.
- Use real-world data sources to showcase social, financial, and political phenomena.
- Create Python-based scripts to automate the cleanup, restructuring, and rendering of large datasets.
- Interact with APIs by using Python requests and JSON parsing techniques.
- Generate in-depth graphs, charts, and tables by using a wide variety of data-driven programming languages and libraries.
- Use geographic data to create visually exciting, interactive, and informative maps.
- Build custom interactive data visualizations by using JavaScript libraries.
- Write SQL commands to perform key database operations.
- Use advanced SQL and NoSQL techniques to combine multiple datasets into comprehensive databases.
- Create basic interactive websites and applications to showcase your work to outside audiences.
- Construct applications and visual datasets with a variety of charts.
- Scrape information from webpages in order to collect data from a broad range of online sources.
- Glean and communicate new business insights using enterprise-grade tools like Tableau.

Course Calendar

Each week is structured around a specific topic and set of skills. You'll also complete a Challenge assignment to apply the skills and knowledge you learned throughout the week.

Section 1: Excel Crash Course

- Module 1: Excel
- Module 2: VBA Scripting

Section 2: Data Analytics with Python

- Module 3: Python
- Module 4: Data Analysis with Python
- Module 5: Data Visualization
- Module 6: Python APIs
- Modules 7 & 8: Project 1

Section 3: Databases

- Module 9: SQL
- Module 10: Advanced SQL
- Module 11: Data Collection
- Module 12: NoSQL Databases
- Module 13: Project 2 - Extract, Transform, and Load

Section 4: Visualization

- Module 14: Interactive Visualizations
- Module 15: Mapping
- Module 16: Project 3 & Data Ethics
- Module 17: Project 3

Section 5: Advanced Topics

- Module 18: Tableau
- Module 19: Unsupervised Machine Learning
- Module 20: Supervised Machine Learning
- Module 21: Neural Networks and Deep Learning
- Module 22: Big Data
- Modules 23 & 24: Project 4

Course Structure

Instructor-led Classes

All virtual classes will be hosted on Zoom. You can access these sessions through your class calendar. During the classes, your instructional team will lead demonstrations, as well as guide you through independent activities and interactive group work. You will also use Slack to communicate and collaborate with your instructor and peers. Class recordings are available in Canvas ([Bootcamp Spot](#) (BCS)).

Office Hours

Open office hours are held before and after every class. During office hours, your instructional team will be available to answer questions, offer technical support and troubleshooting, and review content.

Getting Started with Tech

Review the prework for detailed information about hardware and software requirements for this boot camp.

Your Support Community

We believe that a robust support team is essential to helping you succeed in the program. The core members of your support team are:

Instructor

Your instructor is the lead facilitator for your learning experience. They guide all classes and office hours, guide the TA team, and monitor your progress.

Teaching Assistants (TAs)

The TAs provide support and guidance. They attend classes, help troubleshoot issues, answer questions, and lead small breakout groups. TAs also offer additional office-hour sessions on Zoom.

Student Success Manager (SSM)

Your SSM oversees your experience and helps you with any non-curriculum needs. These include questions about the course structure, delivery, and policies. If you don't know where to go, whom to ask, or what to do, ask your SSM.

Peers

You'll collaborate with other students, seek their help, and assist others both in class and on Slack. You'll also connect with peers in group projects and study groups.

Career Services

Your Career Coach and Career Materials Advisor will support you in your goals after completing the boot camp. The career services team provides optional services throughout the program.

Learning Assistants

Learning assistants are available to answer quick content and concept questions via Slack outside of class hours. Simply use the #AskBCS tool in Slack to connect.

Tutor Network

If you need additional help to get back on track, you can request a tutor using the "student support" link in Canvas (Bootcamp Spot).

Assignments and Grading

Assignments

Throughout the course, you will complete the following types of assignments:

- **Weekly Challenges:** Each week includes an individual, culminating assignment that requires you to apply key skills covered in that module. In general, the weekly Challenge should take 5–10 hours to complete. There are 17 weekly Challenges throughout the boot camp. You may skip two Challenge assignments if you wish. In those cases, you will submit a statement that you're skipping. If you complete all Challenge assignments, your lowest two will be dropped when calculating your overall grade.
- **Projects:** Throughout the course you will complete four group projects. For these projects, teams will apply key processes learned during the associated section of the boot camp to solve real-world problems. You will receive detailed instructions for each assignment throughout the course.

Grade Breakdown

You will receive an overall grade for the course based on the following:

- Projects: [40%]

- Challenge assignments: [60%]

Grading Policy

For each assignment, you'll receive both a numeric and letter grade, as the following table shows:

A+	100	B+	88–91	C+	78–81	D+	70–71	F	<61
A	95–99	B	85–87	C	75–77	D	65–69		
A–	92–94	B–	82–84	C–	72–74	D–	62–64		

You'll receive an "incomplete" for any assignment that doesn't meet the baseline requirements. If a Challenge assignment submission is marked as "0," it is considered incomplete and will not count toward your graduation requirement. Examples of incomplete submissions include:

- A repository that has no code.
- A repository that includes a unique name but nothing else.
- A repository that includes just a sample README file but nothing else.

Each assignment that doesn't receive an "incomplete" will count toward the graduation requirements. For the minimum grading requirements, refer to your enrollment agreement.

Graduation Requirements

Graduates of the course will receive a certificate of completion from the university. To graduate from this course and receive your certificate, you must fulfill the following requirements:

- Miss no more than 8 classes.
- Complete all projects.
- Miss no more than two Challenge assignments.

Procedures and Policies

Accessibility and Privacy Policies

The following links display the accessibility policies for the technologies used in this course:

- [Canvas Product Accessibility](#)
- [Slack Multi-year Accessibility Plan](#)
- [Zoom Accessibility](#)

The following links display the privacy policies for the technologies used in this course:

- [Canvas Product Privacy Policy](#)
- [Slack Privacy Policy](#)
- [Zoom Privacy Statement](#)

Career Services Policy

The career services team strives to help you become employer-competitive. They offer support via a Career Materials Advisor, a Career Coach, in-person demo days, and online workshops and events. Once you have an employer-ready resume on file and have completed five weeks of the boot camp, you'll have access to one-on-one career coaching until 90 days after graduation. Your career materials advisor will respond within 96 business hours, and your Career Coach will respond within 24 business hours.

Code of Conduct / Academic Honesty

You are expected to work independently on all individual graded assignments and to submit your own work. Any violations of the university's academic honesty policy may result in your removal from the program. Please consult with your Student Success Manager (SSM) if you have any questions about the university's policy.

Communication Guidelines

At times, a boot camp can be stressful; you're working to puzzle out emerging skills. It's important to be mindful of your peers' needs and to be courteous in how you communicate with them and your support teams. This is especially true in online communication spaces, such as email or Slack, where it's easy to misinterpret comments. Consider the following communication guidelines:

- Use encouraging, supportive tones when interacting with peers.
- Try to help peers who are stuck on a topic.

- Take opportunities to thank your support team for their help.
- Avoid yelling, sarcasm, and abusive language directed at peers or support-team members.
- Be clear and specific in all your help requests. Include screenshots and locations for content trouble spots so that your TAs and peers can efficiently help you.

Course Feedback

We believe in continually improving our program—whether that means building in more targeted practice to support learning, adding new content to address the evolving needs of a dynamic industry, or providing your instructor with innovative ideas to tailor the classroom experience. For this reason, we ask for your feedback at the end of each module, at the midpoint of the course, and at the end of the course. We appreciate your honest responses.

Drop Policy

If you're not able to take the course, you can drop it within the timeframe that your enrollment agreement outlines and receive a refund of your balance paid. After the first full week, you're required to fulfill your tuition payments regardless of your status in the course.

If you want to drop the course, you must contact your SSM.

Late Assignments Policy

All weekly Challenge assignments are due at the time indicated on the course calendar in your learning environment. It's important that you follow these dates to stay on target and receive timely feedback. The program moves fast, so you will find it difficult to catch up if you fall behind. You may skip two Challenge assignments if you wish. You must submit all work by the last day of the course.

Tutoring Policy

We offer tutoring for students who need additional support through 50-minute, one-on-one online sessions. While tuition is inclusive of this service, you must be in good standing with class attendance, payment, and assignment submissions to qualify for tutoring. Students are granted one session per week during the course. You cannot accrue additional sessions, nor can they be held after the graduation date.

Failure to show up for a scheduled tutoring session will result in ineligibility for future tutoring. If you need to cancel a tutoring session, you must do so at least six hours before the session is scheduled to begin.