# Data Analytics Program

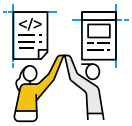
Curriculum Package

LIGHTHOUSE LABS

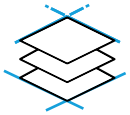
# The Lighthouse Labs Experience

At Lighthouse Labs, we understand that being a data analyst requires much more than just learning to read datasets and navigate popular data tools, libraries, environments, and workflows. Our program, will provide you with the skills, knowledge, and confidence to launch a career in data analytics. From SQL and Python to Tableau and beyond, each module of our immersive, industry-driven curriculum is designed to equip you with a strong foundation of skills to help you succeed and grow as a data analyst. Throughout the program, you'll also benefit from the support of our diverse community of mentors, student success coordinators, and career services advisors.

**Industry-Driven Education**



**On-Demand Mentorship**



**Real-World Portfolio**

**Personalized and Immersive**

**Continuous Feedback**

At Lighthouse Labs, we're committed to building a diverse and inclusive learning community. If you need help and support, we're here for you — no matter where you are in the process.

## Your Journey With Lighthouse Labs Will Help You To:

- Use popular data analytics tools, libraries, environments, and workflows
- Extract, transform, and analyze data, and use SQL to support data-driven decision-making
- Import, manipulate, and explore data using Python
- Identify trends and patterns in data using statistical models
- Use Tableau to explore data connectivity, data preparation, and visualization design principles
- Select the most effective data visualization method to tell a story from an existing dataset
- Create dashboards to combine multiple visualizations into a single interactive interface
- Present findings to both technical and non-technical audiences
- Get started in a career as a data or business analyst and other data-driven roles


Our annual **Student Outcomes Report** is a validation of our reputation for solid outcomes for our students - **an impressive 96% employment rate** for all graduates, with 89% of job-seeking graduates finding a job within 180 days of graduation.

# Learn How to Learn

We've built a carefully crafted curriculum, informed by industry professionals, leading experts in data analytics, and technology experts who know what you need to succeed as a data analyst. Focused around four pillars of knowledge and skills essential to data analytics, our curriculum is complemented by tried-and-true reinforcement strategies designed to help you build key skills to succeed in an ever-changing landscape.

# Data Analytics Pillars

**Code Fundamentals**
Python
Clean Code
Statistical Modelling
Frameworks and Libraries
Git, Command Line and APIs

**Data Analysis**
Extract-Transform-Load Process
SQL (PostgreSQL)
Data Manipulation
QA Processes
Data Ethics and Access
Pandas
NumPy


**Data Visualization and Dashboards**
Tableau
Data Connectivity
Data Preparation
Storytelling with Data
Design Principles

**Data Soft Skills**
Communication and Presentation Skills for Technical and Non-Technical Audiences
Teamwork
Interview Skills

# Our Educational Approach

**On-Demand Mentorship**

Our mentors are experienced, working professionals who coach students through roadblocks during their course while sharing key problem-solving strategies that will set them up for success and continual growth on the job. Students can reach out at any time to receive 1:1 coaching for both technical and career-related questions, job hunting tips, and interview pointers. Mentors also help students build their network, connecting them with other industry professionals.

**Interactive, Immersive, and Collaborative**

When it comes to learning something new, we're with you step by step. We'll show you how it's done, guide you through your first attempt, provide constructive feedback and help you gain confidence with your new skills.

# Research, Reflect, and Present

The data analytics industry is constantly evolving. Data analysts need to be adaptable too. To inform business decisions, they need to be able to step back, research and navigate evolving data analysis tools, libraries, and workflows. You'll build these skills through short weekly reflections and presentation sessions, where we challenge you to tailor your presentations for various audiences. These reflections and presentations will become part of your technical portfolio — an invaluable asset you can use beyond graduation to demonstrate your experience presenting data insights.

**Tech Interviews**
Prepare for the real-world hiring process by completing a series of mock technical interviews with mentors.

# Build Your Portfolio

**Core Curriculum Projects**
As a data scientist, your ability to quickly understand a need, contextualize data and present it in a meaningful way is paramount. That's why the program is dedicated to experimenting and building data science solutions. By the time you graduate, you'll have a diverse portfolio of data analytics explorations to show potential employers.

**Final Project**
The last module of the program is your time to shine! Your final project allows you to use your creativity and coding acumen to develop a hypothesis and explore the entire analytics process from end-to-end using a dataset to solve a problem of your choosing.

**Career Services**

**Intro to Career Services:** Meet the incredible Career Services team (which you'll have access to for life), who'll go over expectations, outline services, and get you thinking about what they want to do after graduation.

**Resume Workshop:** Curate and optimize your own data analyst resume then have a 1:1 sit down with our Career Services team to review it.

**Interview Workshop:** Learn how to prepare for and answer common interview questions.

**Job Search Process:** Explore about the next steps ahead of your job search with the Career Advisory Team. You'll also be filled in on upcoming Career Readiness Workshops, which will further assist you in job search readiness.

# Our Tech Stack

While learning key data analysis languages and tools prepares you for your first role, a lifelong learning mindset amid a changing industry and landscape is vital. That's why we cover a myriad of tools and technologies vetted by subject matter experts, our network of employers, and members of the broader tech community — equipping you with marketable, industry-relevant digital skills.

### Data Analytics Environment

Set up a Data Analytics Environment on your own machine using Anaconda, VSCode, Virtual Environments, and Tableau.

### Coding

Learn the basics of programming, including Python, PostgreSQL, Git, and Jupyter Notebook.

### Statistical Modelling

Use Python to apply relevant statistical models to data to make recommendations and support business decisions.

### Data Wrangling

Master the art of data manipulation and preparation for data analytics using Pandas, APIs, and ETL.

### Databases

Discover relational and non-relational databases with a focus on PostgreSQL and SQLite.

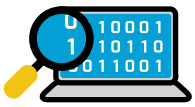

### Data Visualization

Learn the principles of graphical integrity and the guidelines for visualization context with tools like Tableau, Matplotlib, Seaborn, Plotly, and Geopandas.

# Curriculum Breakdown

## Prep Work

- Data analysis in spreadsheets
  - Introduction to data analysis and statistics
  - Data collection and cleaning
  - Analyzing data
  - Communicating with data
- The command line
- Version control
  - Git and GitHub



## Transforming and Analyzing Data with SQL

- Database, types, components, and database management systems
- Cleaning and transforming data using SQL
- Implementing the ETL (extract, transform, load) process
- Descriptive and diagnostic analysis
- Quality assurance processes
- Data ethics and accessing data

## Statistical Modelling with Python

- Data environment setup
- Python fundamentals and libraries, including Pandas and Numpy
- Accessing data from APIs using Python
- Cleaning, transforming, and loading data using Python
- Python libraries for statistical modelling
- Regression and classification models
  - Applying the correct model to a defined problem
- Performing EDA (exploratory data analysis) leveraging statistics and visualizations
- Applying statistical models and interpreting outputs

## Data Visualization and Dashboards with Tableau

- Data visualization basics, including best practices
- Tableau basics
  - Data types
  - JOINs
  - Blends
  - Hierarchies
- Creating visualizations to communicate insights
- Building impactful and interactive dashboards

### Final Project

It's time to put all your skills to the test with this final project! Here you'll demonstrate your ability to:

- Define and outline a business problem
- Combine data from different sources
- Perform data cleaning and wrangling
- Conduct exploratory analysis
- Apply statistical models
- Interpret and present patterns and insights

# A Support Ecosystem Adapted to Your Needs

## Proactive Student Support

Support from the day you apply to the day you graduate. We pride ourselves on our hands-on, proactive education approach, so you can expect daily and weekly check-ins from Student Success Coordinators to track your progress and support your student experience.

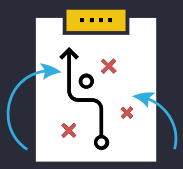
## Accessible Education

We're committed to building a diverse and inclusive learning community. If you need help and support as a student, we're here for you. Accessibility is not one-size-fits-all, so neither is your accommodation plan. We work with each student to develop personalized plans that support their individual needs.

Learn more about accommodations and accessibility at Lighthouse Labs on our website.

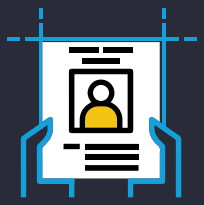
# Launch Your Career

Career Services is the lifetime support we offer our graduates as they progress along their career journey. From connecting them with their first roles in tech post-graduation to mid-career boosts, our team will work with you at any stage in your career to identify your goals and help guide you to achieving them.



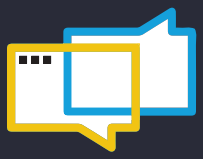
**Personalized Coaching**

Our team will work with you to map out a rigorous career plan, then help you achieve it.



**Résumé and Interview Help**

Detailed feedback and tips will help you perfect your points of contact with potential employers.



**Connect with Employers**

Tap into our vast network of leading tech employers through events, networking, and more.

Our Career Services team maintains relationships with an ever-growing network of industry contacts, keeping their finger on the pulse of what employers are looking for in this fast-paced industry. We hustle from day one and expect you to do the same. Finding a job is no easy task, but whether you're pivoting from a different role or looking for your first position, we'll support you every step of the way.

# Life After Lighthouse Labs

**Community**

As an alum, you remain an active part of our community. We host Demo Days, guest speakers, and exclusive alumni events on the regular.

You also gain access to our Alumni Discord channel, where you can keep in touch with your peers, organize educational and social events, and hear about recurring alum events.

**Continuous Learning**

As a Lighthouse Labs alum, you will always have access to our curriculum and its future iterations — yes, until the end of time.

Your access to our learning platform never expires. You'll benefit from ongoing lecture notes and learning resources as we continue to iterate our world-class curriculum.

# READY TO CONQUER DATA?

Apply Now

LIGHTHOUSE LABS

www.lighthouselabs.ca