

# **FULLTIME PROGRAM SYLLABUS DATA SCIENCE**

**Become a Professional Data Scientist**





# PROGRAM OVERVIEW

The Hacktiv8 Data Science Bootcamp is a full-time, twelve-week intensive experience that hones, expands, and contextualizes the skills brought in by our competitive student cohorts, who come from varied backgrounds. This program will provide you with the knowledge, skills, and experience to get a job in the field of Data Science – which requires a mix of software engineering, statistical understanding, and the ability to apply both skills in new and challenging domains.

Incorporating traditional in-class instruction in theory and technique, students use real data to build a five-milestones portfolio and one final project to present to potential employers. Upon graduating, students have completed rigorous training in programming with Python, statistics, machine learning and deep learning.



## 1. Programming:

- Python Programming: Writing functions, logic, control flow, and building basic applications, as well as common data analysis libraries like NumPy and pandas.
- SQL programming: Querying databases using joins, aggregations, and subqueries
- Comfortable with using the Terminal, version control in Git, and using GitHub

## 2. Probability and Statistics:

- Descriptive Statistics: Calculating measures of center and spread, estimation distributions
- Inferential Statistics: Sampling distributions, hypothesis testing
- Probability: Probability theory, conditional probability

## 3. Mathematics:

- Calculus: Maximizing and minimizing algebraic equations
- Linear Algebra: Matrix manipulation and multiplication

## 4. Data visualization and Interactive Dashboard:

- Exploratory data analysis and visualization
- Explanatory data visualizations and dashboards

## 5. Machine Learning:

- Feature Engineering
- Supervised Learning: Regression, Classification
- Unsupervised Learning: PCA, Clustering, Anomaly Detection

## 6. Deep Learning:

- Artificial Neural Network
- Computer Vision
- Natural Language Processing

## 7. Deployment

# EDUCATIONAL OBJECTIVES

The ultimate goal of the Hacktiv8 Data Science Bootcamp is for you to learn the skills you need to perform well as a data scientist. As a graduate of this program, you will be able to:

- Use Python and SQL to access and analyze data from several different data sources.
- Use principles of statistics and probability to design and execute A/B tests to assist businesses in making data-automated decisions.
- Able to design ML models and/or neural network based on case.
- Deploy a data science solution.
- Manipulate and analyze distributed datasets using Apache Spark.
- Communicate results effectively.

## Length of Program

12 Weeks with 420 Hours of Lectures.

## Instructional Tools Available

Video Lectures, Readings, Quizzes, Quiz and Projects, Student and Mentorship Community Chat, Searchable Q&A Platform

## Flow of The Day

Morning in the Classroom (9.30am - 12.00pm)  
90-Minutes Lunch (12.00pm - 1.30pm)  
Working Afternoon (1.30pm - 6.00pm)

## Prerequisite

Our course assumes that you are comfortable using python as a general purpose programming language. You should expect to be writing python code at least four hours a day, and so you will want to feel very comfortable with this prospect.



**HACKTIV8**

**Untuk informasi lebih lanjut silakan hubungi team Admission kami**



[Halo@hacktiv8.ac.id](mailto:Halo@hacktiv8.ac.id)



021-8067 5787



021-5099 6662

