Course outline

Week	Topic
1	Introduction: Overview of Big data, Hadoop architecture
2	Hadoop and Spark Architecture, Map Reduce. Hands on: Map Reduce example using Google Collab
3	Spark Architecture, RDDs Hands on: Spark Hands on using Google Collab
4	Relational and NO SQL databases
5	Data processing - SQL Hands on using Google Collab, GCP
6	Data processing 2 - Pandas Dataframes Hands on using Google Collab, GCP
7	Data processing 3 - Spark Data Frames Hands on using Google Collab, GCP
8	Streaming (Kafka, PubSub) Hands on using GCP
9	Machine Learning on Big Data Hands on using GCP
9	DataOps and MLOps
10	Case studies and end to end system design

Labs

1. [Introduction to Cloud Dataproc: Hadoop and Spark on Google Cloud](#)
2. [BigQuery Soccer Data Analysis](#)
3. [Machine Learning with Spark on Google Cloud Dataproc](#)
4. [Stream Processing with Cloud Pub/Sub and Dataflow: Qwik Start](#)
5. [Perform Foundational Data, ML, and AI Tasks in Google Cloud: Challenge Lab](#)