

## Basic Data Science Program Curriculum

### Pre-Studies

- Online Courses in Python, SQL and Statistics
- Understand and write simple Python programs
- Understand database and write basic SQL queries
- Understand statistical concepts

### SQL

- SQL data types
- Primary and foreign key
- Window functions, lateral queries,
- recursive CTEs
- Common SQL keywords
- DBMS

### Database & Data Warehouse

- Data normalization
- Data warehouse & data mart
- Data vault
- ER models
- SCD (Slowly Changing Dimensions)
- Dimensional modelling

### Python Language

- Common python keywords
- I/O
- IDE
- Python in Data Engineering & Data Science

### ETL& ETL mini project

- Apache Airflow
- REST API
- CDC
- Pandas
- Techniques
- Unit test
- RDBMS

### Visualization

- Power BI
- Python-dash
- DAX

### Machine Learning & ML mini project

- Python Analytics
- Scipy
- Clustering, regression, classification
- Numpy
- Sci-kit

### Deep Learning Tensorflow/Keras

- MLP
- NN architectures
- CNN
- Pretrained models
- RNN
- PCA

### Agile methodology

- project management
- Frameworks
- purpose, structure, building blocks
- Cooperation
- Software

### Git

- Version control
- Common Git concepts
- Collaboration
- Execute commands
- Create, review, pull

### Azure & AWS

- Cloud provider
- Managed analytics service
- Container virtualization
- Containerized apps
- Docker container

### Graduation Project

- Individually chosen project to be carried out in small groups
- Opportunity to dig deep
- Practical and hands-on application
- Presented in writing and in front of peers, clients and expert panel

### Soft Skills – Continuously throughout Program

- Self-leadership
- Time management
- Business mindset — being a trusted advisor