



Big Data & Data Science Program Diploma Courses

Date: March, 2019 – v 3.0

Diploma Structure

The Big Data & Data Science Diploma requires the attendance of 4 courses and 1 hands-on group project according to the following structure:

Semester #1 (2 Courses)

- 1- Introduction to Big Data, Developing with Spark and Hadoop (42 Hours, 14 Lectures)
- 2- Introduction to Machine Learning and Statistical Analysis (42 Hours, 14 Lectures)

Semester #2 (2 Courses)

- 3- Advanced Big Data Analytics Technologies and Applications (42 Hours, 14 Lectures)
- 4- Only 1 of the 3 following courses:
 - Practical Data Mining (42 Hours, 14 Lecture)

OR

- Practical Data Science Using Machine Learning Technique (42 Hours, 14 Lectures)

OR

- Selected topics in Deep Learning (42 Hours, 14 Lectures)

Semester #3 (Final Project)

- Hands-on group project based on real life use case (14 Weeks of Mentoring)

Please refer to **Appendix A** for the description of each of those courses.

Important Notes

- All enrollments are subject to the admission rules and acceptance criteria of Nile University and the Big Data and Data Science Program.
- The default training location in Nile University premises and any change will be decided upon case by case by the program management team.
- Timing, lecture distribution, assigned instructors and schedules will be assigned and announced to students upon registration completion subject to Nile University and the program administrative decisions.
- The courses details and outlines might get changed due to continuous development and enhancements to cope with trending theories, technologies, methods and applications in this domain.

For more details and pricing, please contact us: bigdata@nu.edu.eg

Appendix A: Course Descriptions

Hands-on Group Project Based on Real-life Use Case (14 Weeks of Mentoring)

Description

After such long learning journey of evolutionally growing Big Data technologies and Data Science techniques and applications; the objective of the group project is to put all what students have learned during the 4 courses of the diploma into a real-life end to end customer-like engagement to strengthen the expertise they have gained and acquired through their contribution over the two semesters of the diploma.

Under mentoring provided by the project supervisors, each group of typically 5 students will select a project topic and start applying industry driven CRISP-DM lifecycle to build end to end data driven use case. Over 6 weeks of mentorship, each group will follow key milestones to produce final solution and present their work for discussion and evaluation.

Pre-requisites

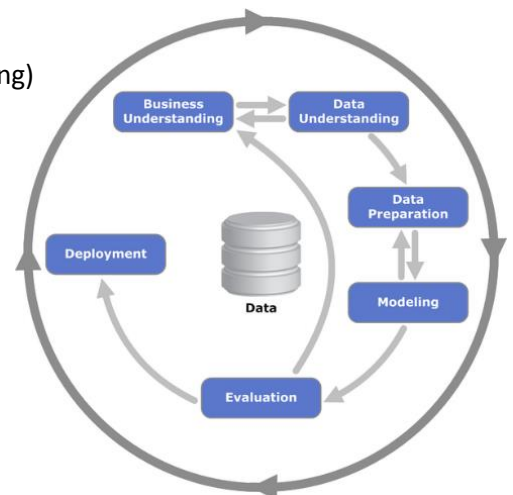
- Attend the 4 Courses of the Big Data & Data Science Diploma (Or equivalent knowledge subject to NU evaluation)

Project Life Cycle Milestones

CRISP-DM (Cross Industry Standard Process for Data Mining)

- Business Understanding (15 %)
- Data Understanding (10 %)
- Data Preparation (25 %)
- Modeling (20 %)
- Evaluation (15 %)
- Deployment (15 %)

(% of the overall project time)



Formulate a Data-Driven Use Case for the Project

- Hi-level description and objectives of the use case
- Challenges addressed by the use case
- Pain points and impact of each challenge
- Goals, success criteria, constraints and assumptions
- Available data, data sources and required resources
- Modeling approach for each challenge
- Overall model structure & workflow
- Application of the use case into operational solution
- Model Return on Investment (ROI) estimation