Data Analytics

Graduate Certificate Program

Contents

Data Analytics Program Overview

This program has been designed to provide business graduates with the foundational knowledge they need to begin thinking and working in a data-driven fashion. They will understand how to apply the latest data analytics techniques to solve business problems, how to access and work with the raw data they need and how to communicate the resulting insights clearly and concisely to other stakeholders.

During this programme participants will learn how to:

- Apply data analytics techniques to answer business questions
- Communicate their insights using the best data storytelling techniques
- Get the data they need from a database using SQL
- Perform exploratory data analysis using Python
- Clean and transform a dataset using Python
- Build and test a machine learning model using Python
- Provide requirements effectively to IT teams
- Perform data analysis in a governed fashion ensuring that outputs are accurate and can be trusted for use in business decision making

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Program Roadmap

Classroom | eLearning | Assessment

Part 1
Pre-learning

Research activities & Pre-reading

Part 2
Classroom learning

- Module 1 Foundations of Data Analytics (D&A)
- Module 2 How to Solve Common Business Problems Using Analytics
- Module 3 Programming 1: SQL for Data Analytics
- Module 4 Programming 2: Python for Data Analytics
- Module 5 Communicating with Data
- Module 6 Data Governance and Quality

Part 3
Assessment

Group Project Final Assessment

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Part 1: Pre-Learning

PRE-WORK

Before attending the workshop, we recommend that you dive into our curated selection of articles and guides. These resources will provide you with valuable insights into the importance of business analytics and how you can leverage data and analytics to answer critical business questions and improve operational efficiencies.

By going through these materials, you'll be better equipped to participate in the workshop discussions and activities. You'll also gain a deeper understanding of how data analytics can drive business growth and enable you to make informed decisions based on data-driven insights.

Part 2: Data Analytics Workshop Overview

CLASSROOM SESSIONS

Features

- **Breakout Room Exercises**
- **Case Studies**
- **Real-world Examples**
- **Polling**
- **Q&A**

Instructor: Charles Ellis

Overview

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Learning Objectives

Target Audience: New Recruits

- Perform exploratory data analysis using Python
- Clean and transform a dataset using Python
- Build and test a machine learning model using Python
- Provide requirements effectively to IT teams

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Part 3: Workshop Outline

CLASSROOM SESSIONS

Day 1

Foundations of Data Analytics (D&A)

1. What is Data Analytics?
2. Brief overview of the history of D&A in a corporate setting
3. Role of business users in D&A:
4. What does it take to be successful?
5. Current state of the industry
6. Common challenges in data and analytics
7. Difference between Data and Metrics
8. Data mining process
9. Different types of analytics processes
10. Case Studies of Success:
11. Common denominators of success across case studies
12. Current trends in Data & Analytics

How to Solve Common Business Problems Using Analytics

1. Common data approaches
2. Problem solving with data
3. Prerequisites to solving data issues
4. Questions before go-live
5. Working and communicating with IT teams

Day 2

Programming 1: SQL for Data Analytics

1. What is a database?
2. Essential database terminology
3. Important dependencies for analytics
4. SQL query basics
5. Using functions
6. Grouping data and computing aggregates
7. Using subqueries
8. Working with multiple tables
9. Window functions

Day 3

Programming 2: Python for Data Analytics

1. Usefulness of Anaconda and Jupyter Notebooks
2. Main Python packages for data analytics
3. How to import data formats into Python
4. Exploratory data analysis
5. Dividing data into training & test sets
6. Building and interpreting models
7. Cross validate model estimations
8. Going beyond research - putting it in production

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Part 3: Workshop Outline

CLASSROOM SESSIONS

Day 4

Communicating With Data

1. What is data storytelling
2. Why is it important for businesses
3. Data storytelling best practices
4. Storytelling in financial services
5. Case study applying techniques we have learned to real world data

Day 5

Data Governance and Quality

1. What is data governance?
2. Role of the business in data governance
3. The importance of having a robust data governance framework
4. Foundations of good data governance
5. Data governance framework design
6. Data governance roles and responsibilities
7. Key artefacts to be maintained
8. 6 most Important data quality metrics
9. 4 essential metrics for business value

Wrap-Up

Question & Answer

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IN PRACTICE

Each group will present a project to design a best-in-class data and analytics function from the ground up to include:

1. A data and analytics vision and strategy
2. A list of initiatives that can be undertaken to deliver business value and answer specific business questions
3. Data architecture design of a data and analytics platform, including data engineering pipelines and data warehouse design
4. A target framework for data governance
5. Data quality checks to be implemented

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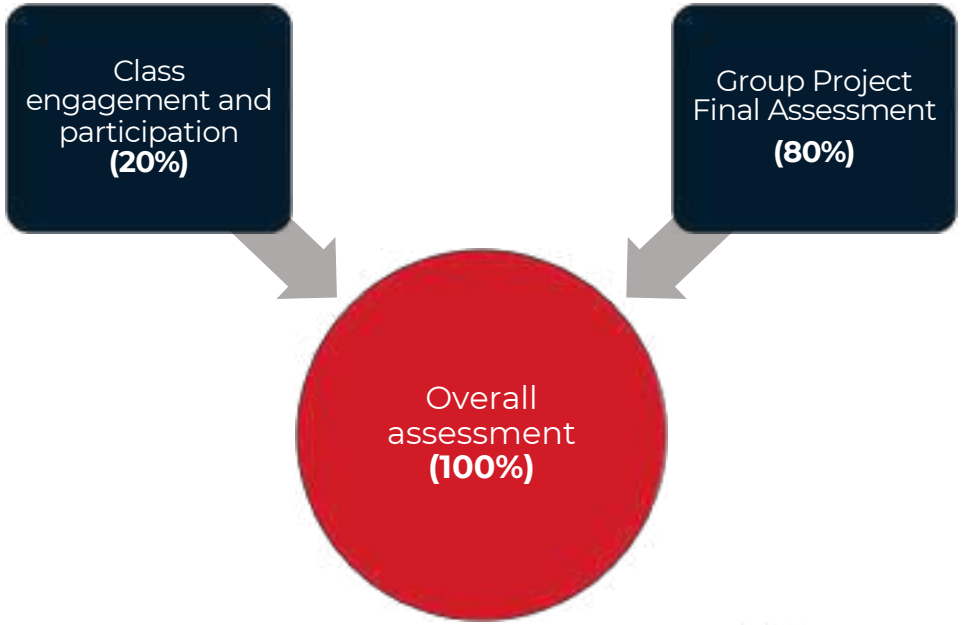
Part 4: Assessment

CLASSROOM SESSIONS

The Assessment will have 2 components:



Certificate Accreditation

Group Project Final Assessment

Will be evaluated by the trainer on the following:

- Appling data and analytics techniques to answer a business question
- Extracting data they need from a database using SQL
- Cleaning and analysing the data
- Building, testing and interpreting a data science model that answers a particular business question
- Designing and building a dashboard to present the key insights from the data in a way that follows data storytelling best practices
- How they can work with the IT team in the future to ensure data quality is maintained

Class Engagement and Presentation

- Will be evaluated by the trainer
- Based on a pre-defined set of criteria

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Program Director

Alastair

Alastair is a financial services and professional education expert specialising in Credit Skills and Risk Management. He is Head of Learning Services, EMEA at Intuition responsible for program needs analysis & design, faculty management and classroom delivery. He is Visiting Professor at LIBF where previously he was responsible for their international business. In 2018 he led a project to set up ADGM Academy.

Alastair worked for over twenty-five years in financial services in a range of senior front office roles for major UK banks (Barclays, RBS and Santander) specialising in asset finance (including number of major financings for oil and gas sector). Alastair was a Consultant at Deloitte in the Banking & Capital Markets group where he had a lead role on a Conduct review into one of the major UK international banks. He has taught banking and finance courses in many countries including Cuba, Egypt, KSA, Malaysia, Oman, UAE, UK, US and Uzbekistan. He has authored two textbooks; Corporate Lending (focussed on mid cap companies) and Bank Regulation & Economic Policy and from 2010-19 was the Chief Examiner for Corporate Lending at LIBF. c

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Trainer

Charles

With over a decade of expertise in leading data initiatives across a multitude of organisations, Charles brings with him unique management experience as well as a proven track record of success.

His journey has seen him in significant roles such as Head of Analytics for a prestigious European asset manager, Quantitative Strategist, and Head of Global Macro Research for a pioneer in the alternative data industry.

He possesses a deep understanding of the design and implementation of data programmes that seamlessly align with business objectives, maximising the return on investment and fostering growth and profitability.

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