Short introduction to the modules on the

MSc in IT for Business Data Analytics

Programme Structure

Term 1
Business and Accounting Fundamentals (6 ECTS)
Computing and Database Management Fundamentals (6 ECTS)
Coding Fundamentals (12 ECTS)
Application Development Fundamentals (6 ECTS)

Term 2
Decision-Making and Analytical Skills (6 ECTS)
Skills for Business Analysts (3 ECTS)
Business Elective* (6 ECTS)
Data Analytics 1 (6 ECTS)
Automation (9 ECTS)

Term 3
Data Analytics 2 (6 ECTS)
Big Data and Machine Learning (6 ECTS)
Coding Project (18 ECTS)

**Business elective:*
Service Excellence
Financial Markets and Securities

Business and Accounting Fundamentals

The aim of the module is to offer those students who had no prior training in business studies a comprehensive overview of how a contemporary business organisation is set up, how the markets behave and how this economic reality is translated into a numerical representation in the form of standardised accounting processes. The module therefore will strive to offer a generic introduction to students as well as a solid foundation in accounting.

Computing and Database Management Fundamentals

The primary aim of the module is to introduce tools and platforms that are essential in a professional context: the types of information systems used in business, their components and their relationships to the organisations they are applied within will be examined. The module will also focus on working with spreadsheets (MS Excel or equivalent) and their usage for complex managerial decision making. In addition, students will also be given an opportunity to take part in exercises with a database management package (MS Access or equivalent) enabling them to experience how information systems can support business operations.

Coding Fundamentals

The main objective of this module is to introduce all the basic building blocks of modern programming languages, and how to combine these elements to create programs. Students will learn how to implement simple algorithms, using all the necessary tools that are standard in software development, like editors, command-line, and version control systems.

Decision-Making and Analytical Skills

The main objective of this module is to equip students with a broad perspective on essential quantitative methods and tools to assist them in decision making processes. The spreadsheet-based teaching (based mostly on Microsoft Excel and to a lesser degree on SPSS) focuses on standard statistical concepts, i.e. single variable, probability theory and normal distributions, statistical inference, hypothesis testing and regression analysis. Students will be able to use analytical approaches in complex settings, gather and interpret information under time constraint, identify and assess options against predefined criteria.

Skills for Business Analysts

The aim of the module is to provide students with a comprehensive overview of the most essential professional skills to perform exceptionally as managers at medium or large enterprises. The module focuses on equipping students with skills and techniques in the following areas: executive oral and written communication, teamwork and cross-cultural collaboration, leadership and organisational skills. The module will apply a flipped-classroom approach to enable students to engage in interactive seminars, group discussions and business case analysis.

Business Elective – Service Excellence

The module prepares students for advanced skills that are crucial in business-to-customer as well as business-to-business relationships and CRM settings. Students will gain in-depth knowledge about relationship marketing techniques, networking and customer communication tools, value creation through service design and delivery, and a comprehensive insight into CRM software (Salesforce).

Business Elective – Financial Markets and Securities

The module's goal is to provide a clear and structured view on how the contemporary financial markets work and how the different securities differ from each other, with the long-term aim of preparing students to be successful as business analysts or junior developers in a fintech type of environment. In that regard, the module aspires to present the functioning of the markets and the main classes of financial assets in a rigorous, yet easy-to-understand manner that will appeal to an audience composed mainly of students who are originally not finance specialists.

Data Analytics 1

The main objective of this module is to introduce the modern libraries and frameworks for business data processing. Students will learn how to implement data transformation pipelines to filter and process data from various sources to create simple results that are useful for the business.

Automation

The main objective of the module is to introduce a great variety of automation tools in a business/management context. The students will be able to deliver automated processes involving operating systems, office suite tools, web pages and 3rd party applications for reducing manual labour and improving automated data collection.

Data Analytics 2

The main objective of this module is to show advanced tools and methods for business data processing. Students will learn how to create an end-to-end data processing solution. Students will be able to create visual reports that enables them to formulate business insights and contribute to the management's decision-making process.

Big Data and Machine Learning

The main objective of this module is to discuss the theory of machine learning and big data, and to familiarise students with contemporary tools that enable business applications of data pattern recognition. Students will be able to create predictive models for business problems and implement them using the modern machine learning tools learnt in class.

Coding Project

The Coding Project is a complex exercise that builds on skills acquired in the previous parts of the programme. Students will be asked to perform a large coding task, working in groups with each student having a specific responsibility and well-defined section to create. They will be required to not only write the code but also to critically assess the process that was followed in order to create it and reflect on their self-development while doing so. The goal is to demonstrate the student's ability to deal with complex issues and propose working solutions to them.