



Think Ahead



Columbia Business School
Executive Education

ACCA Certificate in Business Analytics, delivered in partnership with Columbia Business School

About this certificate

Whether you are leading an organisation, managing a team, or pursuing your next professional chapter you will have an opportunity to:

- understand the fundamental concepts and quantitative analytical methods to think critically about data and the analyses of data performed by or presented to your team
- practice the most common analytical methods and techniques in various industries and sectors to develop data-driven insights and support your business decisions
- feel empowered to identify and evaluate opportunities for creating value for your organisation
- explore the strategies and challenges to implement analytical approaches within your organisation.

Start date: 21 March 2022 (Orientation session, followed by Module 1 starting on 28 March)

End date: 17 June 2022

Estimated time commitment: 36 hours over 12 weeks

*Participants will have access to the programme materials for three months after the programme ends.

Course leader

Allie Dixon - Columbia Business School

Syllabus content

Module 1

Live session: w/c 4 April

1.1 Introduction to Business Analytics

This session introduces business analytics and its main levers that organisations use to capture value through it. Case - Nomis Solutions (part A)

1.2 Lending analytics - Nomis (B)

In this session, we review a common tool to leverage the data for predicting outcomes: logistic regression. Case - Nomis Solutions (part B)

Module 2

Live session: w/c 18 April

2.1 Recommendation analytics - Pandora

In this session, we discuss the possibilities offered by big data and the possibilities for mass customisation of services. Case - Pandora

2.2 Quality of predictions and classification - Tahoe Healthcare

In this session, we discuss how to assess the quality of predictions and quantify the errors one may make when predicting 0/1 outcomes. Case - Tahoe Healthcare

Module 3

Live session: w/c 2 May

3.1 Financial analytics - training and testing models

In this session, we discuss the notion of in-sample and out-of-sample predictions, and how the latter is key to properly assess the quality of predictions.

3.2 Skill versus luck sports analytics

In this session, we discuss how to disentangle skill versus luck when attempting to make predictions about future performance eg of sports players or investors.

Module 4

Live session: w/c 16 May

4.1 Testing - channel management in retail

This session introduces a tool, Difference in Differences, to test the quality of changes in decisions in complex environments, in the absence of perfect experiments. Case - Home and Kitchen

4.2 Simulation - pension analytics

In this session, we introduce simulation, a tool to evaluate decisions in the presence of uncertainty.

Module 5

Live session: w/c 30 May

5.1 Optimisation analytics - pharmaceutical detailing

In this session, we introduce how to formalise the optimisation of many decisions while accounting for different kinds of physical and business constraints. We also practice making decisions in the presence of multiple objectives, by exploring the notion of efficient frontier.

5.2 From concept to deployment - Zara

This session will bring together many of the concepts developed during the course and provide a view of the entire analytics lifecycle. Case - Evaluating Zara's legacy distribution

Module 6

Live session: w/c 13 June

6.1 Business analytics: frontiers, emerging challenges, and application

In this session, we will review some of the main concepts covered but also discuss emerging challenges such as bias and algorithmic fairness.

Assessment

There is one **end of course assessment** which contains a variety of question types. The assessment can be attempted three times in total. The fee covers two attempts to re-sit the assessment, but all attempts must be taken within three months of the course finishing.

The pass mark to achieve the certificate is 50%.

This assessment is the only graded one and is in addition to any of the ungraded self-assessment checks and exercises which will take place throughout the course.

To receive the ACCA Certificate in Business Analytics you must successfully complete the programme and pass the end of course assessment.

FAQs

How much time should be committed to this programme?

The programme is approx 36 hours of learning over 12 weeks. You should aim to complete a course module every two weeks which will take approx 4-6 hours to learn the core course materials. There are two sessions per module, and each session includes a set of lecture videos, readings, self-reflection exercises, and worksheets which should take 2-3 hours to complete. The course leader will discuss the learning from each module across the live sessions. There are six modules in total (not including the bonus Python module).

How long is the access to programme materials?

You have six months to successfully complete the programme and obtain your certificate. The programme runs from 28 March to 17 June. Following the end of the programme you will have access to the course materials for an additional three months to complete the programme and pass the assessment.

The course has started, can I still register?

Yes, participants can register for the programme up until 11 April. After this date, registrations will close.

Do I need any previous experience in data analytics to complete this programme?

While there are no prerequisites, it is encouraged that participants be familiar with basic math and algebra. Working knowledge of Excel formulas and some functions are also recommended to be comfortable with the material.

If the programme entails manipulating data etc, will I require access to any specific software?

You will need to have access to MS Excel on a PC. This course features an optional Excel Add-in to supplement the hands-on learning experience; however there is no requirement to download or use it to complete the course.

For the practical exercises in the bonus Python module, you will also need to set up your development environment, this will include:

- installing Atom
- installing Python
- setting up your command line.

There are instructions and guides on how to do this within the “Getting started” section of the course.

Can I copy/download programme materials?

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Is the bonus Python module mandatory?

No, this is an optional module for participants with experience using Python.

The bonus Python module does not offer introductory tutorials for beginners and requires previous knowledge and experience in using Python.

Before proceeding, ensure that:

- you have experience using Python, including Pandas for data analysis. If you have taken Columbia Business School's "Python for Managers" class, you have the pre-requisite knowledge
- you have Python and Jupyter Notebook installed on your computer.

If you do not have the pre-requisites above, you are welcome to proceed with this module, but you are likely to have some difficulty with the material.

Do I have to attend all the live sessions? Will they be recorded?

No, you don't need to attend all the live sessions, however this is a great source of learning, directly from the course leader.

The sessions will be recorded and available after the session has taken place.

How do I gain the certificate?

To receive the ACCA Certificate in Business Analytics you must successfully complete the programme (watch the lecture videos and take the self-assessments), pass the end of course assessment and take the overall programme evaluation.

You will need to answer all the self-assessment checks within the course, gaining at least 80% in each one, to pass the course.

The end of course assessment includes 20 questions and contains a variety of question types (ie conceptual and numerical). The pass mark is 50% and the assessment can be attempted three times in total.

The certificate is co-branded by ACCA and Columbia Business School. All the content within the programme will be available to participants for three months after the programme finishes.

** The details contained in this document are subject to change due to the nature of the live elements of this programme.*