

## **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:** 20 March 2023 (Orientation week, followed by Module 1 starting on 27 March)

**End date:** 19 June 2023\*

**Estimated time commitment:** 36 hours over 12 weeks

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

### **Course leaders**

#### **Allie Dixon - Columbia Business School**

Allie leads experiment analytics in the online travel industry and has a passion for solving complex business problems, improving customer experiences and developing strategic, creative innovations. Dual degree in Mathematics and Economics from Western Kentucky University and conducted research on education and professional development while on a Fulbright scholarship in Xi'an, China in 2012-13. Allie holds a Master of Arts, Quantitative Methods from Columbia Graduate School of Arts and Sciences.

#### **Yashvi Gattani – Columbia Business School**

Yashvi is second-year MBA candidate at Columbia Business School. Prior to that, she specialised in Data and Insights and Product Research and Innovation for VidMob, a Series C advertising technology start-up. Early in her career, Yashvi received a Rising Star in AI award nomination. Post her MBA, she intends to continue to grow in the AdTech space. She completed her undergraduate studies in Economics from Cornell University.

## **Syllabus content**

### Module 1

Live session: 4 April / 12:45 BST (British Summer Time, one hour ahead of GMT)

#### 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: 19 April / 12:45 BST (British Summer Time, one hour ahead of GMT)

#### 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: 3 May / 12:45 BST (British Summer Time, one hour ahead of GMT)

#### 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: 17 May / 12:45 BST (British Summer Time, one hour ahead of GMT)

#### 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: 31 May / 12:45 BST (British Summer Time, one hour ahead of GMT)

### 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: 14 June / 12:45 BST (British Summer Time, one hour ahead of GMT)

### 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 and certificate and digital badge

The **end of course assessment** includes 20 questions and 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. You will need to answer all the self-assessment checks within the course, gaining at least 80% in each one, to pass the course.

To receive the ACCA Certificate in Business Analytics you must successfully complete the course and pass the end of course assessment. Once you have done this, the certificate will be available to download from the course site.

The certificate is co-branded by ACCA and Columbia Business School.

A digital badge is also awarded to those who successfully complete the assessment. This badge can be used on social media as a symbol of your achievement.

## FAQS

### **How much time should I commit 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 leaders will discuss the learning from each module across the live sessions. There are six modules in total (not including the bonus Python module).

### **How do I access programme materials?**

All programme materials are available within the course site. The modules are organised in sequential number order with content relevant to each module available in that module folder.

The course content is organised by module with a sequential series of short lecture videos (on average 5-8 minutes per video). To begin viewing lecture videos within the course, click the "Continue" button. If you would like to view the full list of course materials, you can click on the "<" button on the top left corner.

The live sessions will be held on Zoom, and you need to register for each session (please see below question for further information on the live sessions). The links to register are in each module folder within the course site.

The assessment is contained in the Assessment folder on the course site.

Supporting documents will be made available through the course site as the course progresses.

### **How long do I have access to programme materials for?**

You have six months to successfully complete the programme and obtain your certificate. The programme runs from 20 March to 19 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.

### **Can I copy/download programme materials?**

Copyright of the materials posted on this site is owned by or licensed to Columbia Business School with all rights reserved. Participants agree to abide by all copyright notices and restrictions contained on the course site. Participants may not copy, distribute, input into a database, display, perform, create derivative works of, transmit, or otherwise use any materials from the course site (including computer programs or other code) ("site materials").

### **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.

### **Do I need to complete all the self-assessment questions within the course?**

Yes, we encourage you to complete each module's self-assessment to practice solving problems that resemble what you can expect in the final assessment.

### **How do I attend a live session?**

The live sessions will be held on Zoom. Participants should pre-register for each session they plan to attend using the links within each module folder on the course site.

- **Download the calendar invitation (or save the email)** with the confirmation details of each session for ease of access.
- **Submit your questions to the course leaders** before each session. The questions you have can be used to drive the session, making the sessions completely relevant to you.

### **Do I have to attend all live sessions?**

No, you don't need to attend all the live sessions, but we recommend that you attend as many as possible. This is a great source of learning, directly from the course leaders. It also allows you to interact with your peers.

If you are unable to attend a live session, the recording will be made available in the course site soon after the session has taken place.

### **Do I need to complete the bonus Python module?**

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.

### **I'm having some technical issues installing the Excel add-in tool.**

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.

If you do want to install the BA Excel Add-In, the installation file will help (choose your download file based on whether you have 32-bit or 64-bit Excel).

There are instructions, troubleshooting guide and user manual in the 'Getting started' section of the course.

### **How do I access the discussion boards?**

There is a unique discussion board that corresponds to each of the six modules. You can find the links to the discussion boards within the ACCA Learning platform in the 'Collaboration' section of the course. The discussion boards should open in a new window where you can make comments and interact with other participants.

### **Is there a time limit for the assessment?**

Yes, you have 90 minutes for each attempt to complete the assessment. You have three attempts to pass the assessment.

### **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.

We encourage you to complete each module's self-assessment to test your understanding of the concepts, theories and formulas presented in preparation for the end of course assessment. This 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.*