**STRATEGIC - DATA ANALYTICS FOR FINANCE**

**EDUCATORS BRIEFING 2020/2021**

## 1. Syllabus objectives

- The aims and learning outcomes are stated in the syllabus document. The types of question set and the marking scheme applied will reflect these.

- Excellent technical knowledge alone is expected of candidates at this level, but it is not sufficient in itself to pass this paper. In accordance with the learning outcomes, candidates need to be able to understand the technical side of data analytics but also consider the landscape they occupy including risk based approaches to data analytics and data privacy. Sections 2 and 3 below provide guidance as to how these aims and learning outcomes will be reflected in the design of the paper and the types of questions which will be asked in 2021.

## 2. Format of the 2021 examination papers

- The examination paper will be a "loosely-stitched" case study. Specifically, the paper will begin with a case description of an organisation (including relevant details appropriate to the case and to the questions, e.g., nature of the business activity, strategies, and control systems).This introductory information will be kept reasonably short (typically less than 500 words). Candidates will be subsequently provided with additional information as appropriate (in the introductions to each of the individual questions). All of the individual questions on the paper will be about this same organisation, in accordance with the integrative nature of the case.

- This structured approach is easier for candidates to manage under examination conditions than a more traditional case study exam paper where candidates are presented with all of the information at once before any questions are set out.

- After the case description at the start of the paper, the remainder of the paper will consist of a number of individual questions (all compulsory). The 2021 papers will consist of 5 questions, with each question carrying approximately 10 to 25 marks.

- Most questions will be divided into two (or at most three) parts. The purpose of this division into parts is to provide candidates with a structure which is intended to be helpful in answering the questions (as a practical matter, candidates will find it easiest to answer the parts within a question in the order in which the parts are asked). To ensure that the content and structure of the paper are in accordance with the learning outcomes and the standard expected at a final professional level examination, the questions will be "declarative" rather than "directional" in style.

- The questions asked will provide candidates with opportunities to draw on their knowledge of all six learning outcomes. In some cases, it will be necessary to call out which models will be used or should be used by the candidate e.g. machine learning, but in many cases the precise form of analysis required will be for the candidate to determine.

- Although candidates will need to be able to identify (and justify) the appropriate model for a given scenario, this on its own is not sufficient and the understanding of assumptions and relevance of different models and analyses is critical.

## 3. Education focus for 2021

- As indicated above, it is necessary (but not sufficient) for candidates to have excellent technical knowledge but this is not by itself sufficient to pass this paper. In order to pass, candidates need to be able to apply their excellent technical knowledge in a previously unseen setting where they will need to be able to:
  - Discuss strategic advantages in decision making in data analytics e.g. regression to a mean.
  - Apply, justify and interpret appropriate statistical analyses e.g. exploratory analysis, hypothesis testing, etc…
  - Explore the relationship between variables (factors) in a dataset. Apply and interpret output from regression analyses.
  - Gain an understanding of time series analysis for forecasting. Interpret a forecast and appreciate the uncertainty in the prediction.
  - Examine output from dimension reduction e.g. principal component analysis and factor analysis. Interpret output highlighting how this is useful in a real world setting e.g. make conclusions or formulate hypotheses based on scores and loadings.
  - Understand where machine learning models will likely perform well and appreciate their associated risks in the context of big datasets.
  - Understand how to determine the performance of a model as well as how to interpret model comparisons.

- While this is an applied course in data analytics, some questions will require an understanding of the theory behind modelling. A general indication will be an approximate 70:30 split between applications and theory. Ethics and data protection are also important in this context and students should be able to identify the potential risks associated with storing and analysing data such as this.

- Candidates should know that the open book nature of the exam does not make the exam situation easier, and may even be a disadvantage if candidates do not “manage” the situation properly. For example, candidates who spend a lot of exam time consulting textbooks to find technical knowledge which they should have “in their heads” are not only wasting valuable time but also are unlikely to be sufficiently advanced professionally to apply the knowledge at the level expected in this examination.

- Another feature of open book exams is that candidates should not waste time in the exam by writing answers consisting of material which has been (or could have been) transcribed from a textbook or other published source. Questions are deliberately designed so that they cannot be answered in this way; candidates would receive no marks for transcription-type answers because they are irrelevant to the question asked.