DATA ANALYTICS

MARKING GUIDE

The usual CAP Course marking criteria apply:

- Communications
  - Executive summary <= 2 pages, focussed on the key issues
  - The report is logically structured
  - Arguments are logically structured with appropriate evidence and reasoning
  - Language targeted at the intended readers
  - Use of jargon only when absolutely required, and all jargon defined
  - Limitations and qualifications relevant to the case study, not generic
  - Use of visual aids that match the message

- Contextualisation
  - Recognise the key technical issues
  - Reasonable numerical conclusions
  - Recognise what is material
  - Demonstrate an understanding of client business environment and the business drivers
  - Address the main business issues
  - Take the concerns and needs of the audience into account
  - Address any political, governance or professional issues raised by the question

- Data analytics - the following technical topics are covered by the course notes and must be considered when writing the report:
  - Ethics
  - Experimental design
  - Missing values
  - Accuracy versus interpretability
  - Target metric
  - Balancing false positives and false negatives
  - Sample bias
  - Model risk

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A successful candidate would particularly consider the following:

- Ethics: use of age and marital status
- Experimental design: no mismatch and no target leakage
- Missing values: many, so need missing value imputation
- Accuracy versus interpretability: client is more concerned with accuracy than interpretability, but some interpretability is useful
- Target metric: most classification accuracy metrics are suitable for parameterising the model
- Balancing false positives and false negatives: the case study provides the costs and benefits, so the candidate is expected to use this to determine the probability cut off. Recommendations that have less than $50,000 expected profit are unlikely to be suitable.
- Sample bias: none
- Model risk:
    - small sample size of the data limits the accuracy of the model, but there is enough data to build a fairly accurate model (AUC > =0.8)
    - model accuracy likely to drop over time, especially if many campaigns are run
- Communicating decisions and insights, not maths, to Peter because he is not technical and has never used predictive analytics

END OF MARKING GUIDE

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