

## **BEMM457 Topics in Business Analytics: Coursework 1 and 2**

### **2024/25**

#### **Coursework 1**

**Group presentation: 40% of module mark – submitted as a video by Monday 4th November 2024 (12:00 noon UK time).**

#### **Case Description for Group Presentation**

You are an employee of a business analytics team working for a growing multinational business analytics company of your choice, based in choice location in the world. The company specialises in Business Intelligence Management & Technology, Data Science & Analytics, and Data Visualisation, and deploys cutting edge business analytics approaches and techniques to improve their clients' business operations and services (e.g., supply chain, product development, customers satisfaction, employees' turnover, etc.).

Your chosen company has been successful in the market but is looking to achieve its strategic goals of leveraging business analytics to navigate the Fourth Industrial Revolution, gain a competitive edge, improve operational efficiency, and enhance customer satisfaction.

As part of your chosen company's priorities to continuing to provide world class services to their increasing number of clients across national and global market, your team of business analytics is set up to help implement the strategic goals.

**Hence, your team has been tasked to select and work on only four tasks (tasks 1, 2, and 3 are compulsory, and then choose one from tasks 4, 5, 6,) from the following the following six tasks designed to cover the specified BEMM457 learning outcomes:**

#### **1. Task 1: The Fourth Industrial Revolution and Analytics in Business:**

Explain how the Fourth Industrial Revolution has transformed your chosen company, particularly focusing on how analytics plays a role in this transformation. Discuss specific ways your company could utilise business analytics to improve its business operations and customer satisfaction.

### **Guiding Questions for task 1**

- How has the Fourth Industrial Revolution impacted your company (e.g., analytics strategy, employee turnover, operation, etc.)?
- What are four essential business analytics applications (e.g., Sentiment Analysis, Churn Analysis, etc.) that could benefit your company, and why (hint: refer to impacted areas, etc.)?
- How can your chosen company integrate four essential business analytics applications (identified in 2) into its business strategy?

## **2. Task 2: Data Ethics, Governance, and Professional Responsibility:**

Analyse the ethical implications and data governance issues related to data collection and usage at your chosen company. Provide recommendations for ensuring data ethics, responsible innovation and professional responsibility in their business analytics projects.

### **Guiding questions for task 2:**

- What are the key ethical considerations your chosen company should be aware of when collecting and using customer data?
- How should your chosen company handle data privacy and cybersecurity to comply with relevant regulations?
- What governance frameworks should be established to oversee data practices and ensure accountability?

## **3. Task 3: Business Analytics Processes and Frameworks:** Describe frameworks for the data analytics processes that your chosen company could adopt for a new product/service launch. Provide a critical analysis of stages of the process and how each stage of the frameworks contributes to the overall success of the project.

### **Guiding questions for task 3**

- What are the key stages in the data analytics process (e.g., data collection, cleaning, analysis, and reporting), and justify identified processes?
- How should your chosen company structure these stages to ensure effective analysis and decision-making?
- What business analytics tools might be employed at each stage?

- 4. Task 4: Business Analysis:** Develop an innovative business analysis plan for any new project at your chosen company that aims to enhance customer experience through data-driven insights. Describe the steps involved in the analysis and how the results will be used to inform business decisions.

**Guiding questions for task 4**

- What are the primary objectives of the business analysis for this project?
- What dataset/sources will be used and how will they be analysed?
- How will the findings be communicated to shareholders and stakeholders and used to make strategic decisions?

- 5. Task 5: Data Science & Modelling Concepts:** Provide an overview of essential data science concepts and modelling techniques that could be applied to a customer segmentation project at your chosen company. Explain how these concepts help in targeting strategic markets in highly competitive global markets.

**Guiding questions for task 5**

- What are three key business analytics concepts (e.g., regression, classification, clustering) that are relevant for customer segmentation?
- How can these concepts be applied to segment your chosen company's customer base effectively?
- What are the benefits of using these concepts?

- 6. Task 6: Commonly Used Tools in Business Analytics:** Identify and describe four business analytics tools that are commonly used in your chosen company. Recommend which tools your chosen company should consider adopting and justify your choices based on their specific needs and objectives.

**Guiding questions for task 6**

- What are three common business analytics tools (e.g., Python, R, SQL, Tableau) used in your chosen company.
- Critically evaluate these tools (identified), and distinguish how they differ in terms of their functionalities and applications in the context of the chosen company?
- Which tools would be most suitable for your chosen company given their project requirements and why?

## **Presentation requirements**

1. Your chosen company's strategic board requires your team to **deliver a recorded 15-minute presentation, as a group, which provides a clear and coherence contents for three compulsory tasks, including critical justification for the fourth task instead of others.**
2. You can choose to focus on a business analytics company, that provide services for one or more sectors (e.g., market research, pharmaceutical, healthcare, manufacturing). It is essential that you consider relevant theory (e.g., responsible innovation, sustainability, resource-view), while demonstrating your individual and team ability to reflect, critically analyse, communicate, and to work as an innovative business analytics team player.
3. You should ensure that your understanding of the module's learning outcomes is incorporated in addressing your chosen tasks.
4. Ensure that the report, for the presentation, includes relevant data, figures, tables, references, and justifications for your recommendations.
5. The presentation should be clear, engaging, and tailored for an executive audience and strategic team of your chosen company.

## **Hints for Group Tasks Management:**

- Your module leaders/tutor will allocate you to a team (of a maximum of 6 members) in the first seminar session in Week 2 – see your Module Timetable.
- You may need to create 2 subgroups in your team: Sub-group 1 and Sub-group 2, to work on respective task and presentation requirements.
- The recorded video should demonstrate your collective contribution of members (to be submitted as a link in an MS Word document)

## **Notes**

- Sub-groups 1 & 2 should work collectively and collaboratively from outset to address tasks respectively, and then as one team design and present the recorded 15 minutes PowerPoint contents.
- **ONLY ONE MEMBER IN YOUR TEAM** SHOULD SUBMIT ON BEHALF OF THE WHOLE TEAM.
- **Submit your presentation as a link to the video. See further instruction on how to record video presentation guide.**

- As the first attempt requires a group presentation based on a chosen company case analysis, **REF/DEF** will be an individual assessment which requires a student 'to choose a different company to focus their analysis on', and students would be briefed on this requirement in the assessment brief. Hence, 'Please choose a different company to focus your analysis on if this is your second attempt'.

**This component of the assignment is worth 40% of the module mark.**

**Please ensure that you are familiar with the key points from the UEBS group work policy.**

- Students will receive clear instructions on the formation of groups.
- Each group will be supported to create a Group Work Agreement that sets out a plan of action and shared expectations. They must also keep a work log that documents the activities of the group, and the contributions made by individual group members.
- Module leads may request to see this documentation and may use it to inform decisions where allegations of unequal participation have been raised.
- If there is sufficient evidence that a student is not participating adequately in the group work, the module lead may seek the approval of the Director of Education to remove them from the group work assessment. In this instance the student will be deemed to have failed the first attempt at the assessment and will have the opportunity to complete an individual assessment in the referred/deferred assessment period.
- This assessment will be capped at the pass mark (50% for PG).

## Criteria for Evaluating Coursework 1: Group Presentation

Your group presentation will be assessed using the following criteria:

Assessment/Evaluation Criteria/Scheme		% of marks
Understanding of the coursework requirements: Justification for selection of fourth tasks	<ul style="list-style-type: none"> <li>Was there a clear understanding of the coursework requirement regarding business analytics in the context of chosen business organisation. Did the presentation critically engage with peer reviewed academic materials, including use of relevant theories, current report for chosen company?</li> </ul>	20
Evidence of completing the tasks required in the coursework.	<p>Are all the requirements of chosen tasks: 1-4 addressed?</p> <ol style="list-style-type: none"> <li>Was a clear structure of the completed tasks by considering the business analytics resources requirements of the company, as a growing business analytics company, including technology, human, process and policy?</li> <li>Was there clear demonstration of how the tasks are refined by critical review and evaluation of key requirements?</li> <li>Was there a provision of a clear and a comprehensive understanding of the tasks by focusing on chosen company's strategic goal?</li> </ol>	40
Organisation of the PPT contents, visuals and images	<ul style="list-style-type: none"> <li>Did the group organise its material effectively and logically, included appropriate in-text citation and reference list?</li> <li>Did the group appear cohesive as a team?</li> <li>Were visuals used effectively?</li> <li>Did the visuals help illustrate important points?</li> <li>Did the visuals use key words, images or graphs instead of sentences?</li> </ul>	20
Presentation and teamwork	<ul style="list-style-type: none"> <li>Did the presenters engage effectively with the audience rather than simply reading to them?</li> <li>Did the presenters appear prepared and understand the material?</li> <li>Did the presenter speak as business analytics practitioner expressing confidence in the use of keywords and concepts?</li> <li>Was the presentation within the stated time limit?</li> </ul>	20

### Notes/remarks

- You should not conduct any primary research to collect data, but you could use a range of different data types and analytical approaches.**
- Make sure that you refer to the marking criteria/scheme while you are preparing your presentation – this represents the areas that will be considered during marking. Your presentation does not need to be structured according to the headings in the marking scheme – but they also provide some ideas for structure if required.
- References must be provided in APA 7<sup>th</sup> Edition format.

## Coursework 2: Mini business analytics report, worth 60%

Mini analytics project: 60% of module mark – submitted as a written report document by Monday 16th December 2024 (12:00 noon UK time).

### Individual tasks description

- You are required to complete an individual Mini Analytics Project of your own chosen project with publicly available dataset (without sharing/access restriction). You should think about a situation or question about which you would like to develop a deeper understanding. It could be related to addressing existing business analytic challenges in the context of any chosen business sector (e.g., pharmaceutical, healthcare, manufacturing, banking, education, etc.) or societal challenges (e.g., environmental, climate change, crime, flood or poverty alleviation related, etc.).
- You should **apply business analytics techniques and models to the area you are considering**. Once you have decided on your topic area you must think about **what questions you are seeking to explore**, find and prepare appropriate data, undertake analysis, and draw conclusions. This is likely to be an iterative process.
- Your will be assessed based on your overall understanding of key number of areas covered during the module, and the way in which you apply them to an analytics question. It is important you explore existing secondary quantitative data sources, and you are required to **find an appropriate dataset and use the data in an appropriate way throughout the project**.
- **The final report should be 2750 words (+/-10%). It can contain diagrams, tables, and visualizations to support the written component – these will not count towards your word count.** All content must be formatted at 12 MS word font size, pdf or equivalent, and a GitHub link to dataset including codes, visualisation outputs.

### Notes/remarks

- **You should not conduct any primary research to collect data, but you could use a range of different data types and analytical approaches.**
- Make sure that you refer to the marking scheme while you are preparing your report – this represents the areas that will be considered during marking. Your report does not need to be structured according to the headings in the marking scheme – but they also provide some ideas for structure if required.
- References must be provided in APA 7<sup>th</sup> Edition format.

## Criteria for Evaluating Assessment 2: Mini Project

Marks	0 – 39 Fail	40 - 49 Borderline Fail	50 -59 Pass	60 - 69 Merit	70 - 85 Distinction	86 - 100 Distinction
Assessment Category						
<b>Problem Description / Introduction - 10%</b>	The topic is not evident, or is poorly described	The topic is clear, but there are important gaps or omissions. You are required to provide the following contents: <ul style="list-style-type: none"> <li>– What sector have you chosen, why?</li> <li>– What is the aim and objectives of your mini project</li> <li>– What questions (operations, performance, recruitment, growth, etc.) are do you intend to answer?</li> <li>– Analytics tools (software – python, Excel, regression, decision tree, etc.) used, key findings and conclusions.</li> </ul>	The topic is clear and comprehensive, but questions to be explored are not well-framed or are inconsistent	The topic is well described, and questions are clear, included relevant contents, including aim and objectives/research questions in a clear project context.	The topic and questions being explored are clearly identified, context is clear and has been appropriately explored.	Meets and often exceeds the 70 – 85% criteria across all sub-categories.  Work is of demonstrably outstanding quality and would be considered publishable as best- practice in industry literature.
<b>Data access, ethics, security, and privacy related, etc.- 20%</b>	No appropriate data has been identified, or there is little evidence that it has been well- considered. You are required to provide the following contents; <b>Where did you get the data from?</b> <b>Any ethics/privacy/security/etc. considered, and how did you manage them?</b> <b>Any reliability/integrity/validity related concern, and how did you manage them?</b> <b>Date/nature/structure/ of the data, what decisions did you make to address these</b>	Some data has been identified, but there are significant limitations or issues that have not been adequately addressed. You are required to provide the following contents; <b>Where did you get the data from?</b> <b>Any ethics/privacy/security/etc. considered, and how did you manage them?</b> <b>Any reliability/integrity/validity related concern, and how did you manage them?</b> <b>Date/nature/structure/ of the data, what decisions did you make to address these?</b>	Appropriate data has been identified with some consideration of limitations in the context of the problem being explored.	Appropriate data has been identified, with appropriate consideration of the limitations and good description of its relevance and the reason for its use. Demonstrable understanding of the challenges and restrictions in using data for analytics	A good range of appropriate data has been identified, with appropriate techniques applied to ensure it is fit for purpose. Good evidence of consideration of limitations in the context of the problem being explored, and a strong explanation of its validity.	
<b>Analytics techniques, models, and approaches- 20%</b>	Analytics is incomplete, unclear or there are significant errors. You are required to provide the following information: Justify your choice of the technique/model/approach chosen (refer to scholarly resources)?; What analysis did you run? – clips of relevant your codes in appendix; Did you use any libraries (e.g. Python) or Power BI Dashboard?; How did you answer the questions using the models?; Any assumptions for models, or 'honest modification' of the dataset?	Some basic analytics has been undertaken, but there are some errors, and limited information regarding rationale for applying the analytics tools.	Some relevant analytics techniques have been applied with less clarity regarding the rationale of the chosen techniques.	A good range of relevant analytics has been undertaken with good accuracy. Some recognition of the limitations of the analytics undertaken	A wide range of relevant and well- chosen analysis has been undertaken with a high degree of accuracy. Good understanding of the limitations of the analytical techniques applied	
<b>Report presentation, including, visualisation, graphs, plots, etc - 20%</b>	Limited use of appropriate visual support materials; Again, you should have provided the following information: Present your results including visualisation/graphs based on the objectives/questions; Labels your graphs, followed with descriptions and interpretations; What are your key conclusions – for each objective/question? What are your key implications – for each objective/question?	Some appropriate visualisation using basic techniques, which provide only limited information regarding to how you arrived at the graphs/plots, etc.	Appropriate visualisations that are supportive of the narrative and inform the reader	A good range of visualisations used accurately and providing extra explanation on how the presented figures are generation improving overall clarity over and above the text content.	Creative and thought provoking. visualisations that are accurate and fairly represent the nature of the data / analysis they describe. Visualisations add significant value to the reader.	
<b>Conclusion-10%</b>	Little evidence of critical reflection	Some critical review, but some significant inconsistencies or omissions. You are required to provide the following contents: Revisit your aim and objectives; Provide highlight of how the analytic technique/model/approach enable you to achieve your aim and objectives; Summarise your key findings, as relate to each objective/questions; Summarise general conclusion and tie it up with the aim; Any implications of your findings regarding the conclusion; How does your assumptions during analysis influence your results/conclusions.	Appropriate judgements based on evidenced critical review. Some consideration of limitations.	Appropriate and well evidenced conclusions, communicated clearly. Evidence of understanding of the limitations of the project.	Strong evidence of critical engagement considered conclusions supported by strong evidence. Good understanding of limitations of the project.	
<b>Reflection on the projects, and overall project experience and learning-20%</b>	Reflection has not been considered or adequately discussed. You are required to reflect over your experience of carrying out the project and answer the questions: what would you have done differently if you were to do the project again?	There are notable omissions on reflections and learning experiences across the project	Considerable level of reflection has been provided associated with the topic, data and analysis undertaken have been considered	Very good reflection has been presented, and associated with the topic, data and analysis have been considered and addressed appropriately	An in-depth reflection has been associated with the topic, data, analysis and conclusions have been considered and addressed appropriately	



