Assignment Guidance and Front Sheet

This front sheet for assignments is designed to contain the brief, the submission instructions, and the actual student submission for any WMG assignment. As a result the sheet is completed by several people over time, and is therefore split up into sections explaining who completes what information and when. Yellow highlighted text indicates examples or further explanation of what is requested, and the highlight and instructions should be removed as you populate ‘your’ section.

This sheet is only to be used for components of assessment worth more than 3 CATS (e.g. for a 15 credit module, weighted more than 20%; or for a 10 credit module, weighted more than 30%).

**To be completed by the student(s) prior to final submission:**

Your actual submission should be written at the end of this cover sheet file, or attached with the cover sheet at the front if drafted in a separate file, program or application.

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| **Student ID or IDs for group work** | **e.g. 1234567** |

**To be completed (highlighted parts only) by the programme administration after approval and prior to issuing of the assessment; to be consulted by the student(s) so that you know how and when to submit:**

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| **Date set** | 12/01/2022 |
| **Submission date (excluding extensions)** | Before 12 noon UK Time on 14/02/2022 |
| **Submission guidance** | Submit electronically via Tabula |
| **Marks return date (excluding extensions)** | 14/03/2022 |
| **Late submission policy** | If work is submitted late, penalties will be applied at the rate of **5 marks per University working day** after the due date, up to a **maximum of 10 working days** late. After this period the mark for the work will be reduced to 0 (which is the maximum penalty). “Late” means **after the submission deadline time as well as the date** – work submitted after the given time even on the same day is counted as 1 day late.  For **Postgraduate** students only, who started their **current course before 1 August 2019**, the daily penalty is **3 marks** rather than 5. |
| **Resubmission policy** | If you fail this assignment or module, please be aware that the University allows students to remedy such failure (within certain limits). Decisions to authorise such resubmissions are made by Exam Boards. Normally these will be issued at specific times of the year, depending on your programme of study. More information can be found from your programme office if you are concerned. |

**To be completed by the module owner/tutor prior to approval and issuing of the assessment; to be consulted by the student(s) so that you understand the assignment brief, its context within the module, and any specific criteria and advice from the tutor:**

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| **Module title & code** | WM9B1-15 Big Data Technology & Visualisation |
| **Module owner** | Michael Mortenson |
| **Module tutor** | Michael Mortenson |
| **Assessment type** | Essay |
| **Weighting of mark** | 80% |

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| **Assessment brief** |
| You have been appointed as a big data architecture consultant for a start-up in fashion e-commerce using artificial intelligence. The company is initially looking for you provide advice on how they should acquire, store, process and visualise their data – including:  Product information and reviews (text and image data)  Sales and supply chain information (transactional data)  Social media data (mixed)  Other business and operational data they may generate/use.  Your answer should provide justified recommendations for a range of technologies they may use, including:  Databases and/or data stores  Data pipeline and orchestration tools  Data visualisation solutions  Diagrams and descriptions of the end-to-end solution  Consideration of any major risks and identification of appropriate mitigation strategies.  You are expected to use an appropriate report style and support your arguments and recommendations with a mixture of academic and commercial sources. You are free to make any assumptions you need to about the business scenario in order to answer the question. |

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| **Word count** | 4,000 words |
| **Module learning outcomes (numbered)** | Demonstrate an comprehensive understanding of the key differences between Big Data technologies and analysis methods and traditional approaches.  Evaluate real-world scenarios and determine appropriate database solutions (traditional and NoSQL)  Demonstrate a comprehensive understanding of cloud data architectures, the operational risks associated with them, and develop appropriate mitigation strategies  Demonstrate a comprehensive understanding of the core concepts of visual communication and data visualisation.  Practically implement data pipelines and processing in a cloud setting |
| **Learning outcomes assessed in this assessment (numbered)** | All |
| **Marking guidelines** | *20% of marks. Analysis of the business context and identification of the important requirements (functional and non-functional). L2, L3*  **Above expectations**  A detailed explanation of the organisational context with clear requirements, constraints and objectives identified. These elements are re-enforced throughout the report.  **Expectation**  A realistic company description is provided, with sensible particulars that have shaped some of the later decisions. Some elements may be more generic and/or could have been more influential on the recommendations provided.  **Below expectation**  The company description is superficial or overly contrived. Only generic requirements are given and/or requirements are inconsistent with later decisions.  *35% of marks. Development of a data architecture and flow. L1, L2, L3, L4*  **Above expectations**  A realistic and professional design that accounts for business requirements and relevant best practices.  **Expectation**  The proposed solution generally meets the requirements and objectives and is largely consistent with best practices.  **Below expectation**  There are inefficiencies and inconsistencies in the suggested solution that suggest a lack of awareness on current best practices. Some elements may be inconsistent with the organisational description given.  *35% of marks. Selection of an appropriate technology stack. L1, L2, L3, L5*  **Above expectations**  A sensible and comprehensive selection of technologies that are current and relevant to the organisational brief. Decisions have been thoroughly justified throughout.  **Expectation**  Technology choices show some awareness of best practices, organisational requirements and interoperability. Some justification is given for the decisions that have been.  **Below expectation**  Technology choices are arbitrary and poorly justified. Not enough consideration is given to the appropriateness of the choices to the business problems, organisational requirements and/or best practices.  *10% of marks. Overall quality of the report and awareness of the overall risks. L1, L3*  **Above expectations**  Report is well written and professionally presented. Good awareness shown of the limitations and risks associated with the selected technology stack, the complexities of modern data architecture and suitable risk mitigation strategies are suggested.  **Expectation**  Report is reasonably realistic in its presentation and structure. Some consideration is shown of the various risks present, and how they may be mitigated.  **Below expectation**  Report is poorly presented/structured/conceived. Significant risks/limitations are not identified and/or appropriate mitigation strategies have not been identified. |
| **Academic guidance resources** | *Contact the module tutor for guidance* |

**The following is pre-populated for PGT assignments only:**

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| **Writing your Post-Module Assignment (PMA): specific additional advice for WMG’s Postgraduate Taught Students** |
| As a postgraduate level student in WMG you may have some concerns about your ability to write at the high standard required. This short guide is intended to provide general guidance and advice. It is important that if you have any questions you discuss them with your module tutor. Remember, in writing your PMA you need to meet the expectations of the reader and university. |
| **A good PMA generally requires you to answer the question and to include**…   1. A title, with your student number, module, lecturer’s name and any other documentation required by the university. 2. A contents page and if appropriate, an abstract. 3. An introduction which acts as a ‘map’ to the rest of the document, describing the aim or purpose of the work and explaining how this aim is achieved. At this point it is usually helpful to paraphrase your conclusion. 4. Evidence of an appropriate level of background reading of relevant texts. 5. Evidence of systematic and clear thinking, indicative of good planning and organisation. 6. Writing which makes sense, is clearly and carefully presented (proof-read and grammar checked). 7. A critical style of writing which compares and contrasts the main theories, concepts and arguments with conclusions that are based in evidence presented. 8. High levels of accurate academic referencing. 9. A logical and well-defined structure with headings and subheadings. 10. Clearly labelled and well-presented diagrams and other graphics that are discussed in the text. 11. Adherence to usual academic standards including length and a timely submission. 12. A reference section in which every source that is cited in the text is listed. |
| **Where to get help:**   1. **Talk to your module tutor if you don’t understand the question or are unsure as to exactly what is required.** 2. Study, Professional and Analytical Skills (SPA) Moodle site – we have a lot of resources on this website with workbooks, links and other helpful tools. <https://moodle.warwick.ac.uk/> 3. The university Academic Writing centre provides workshops and useful tools to help you in all aspects of your work. <https://warwick.ac.uk/services/skills/academicwriting/> 4. Avoiding Plagiarism, the university’s site to help you to reference properly <https://moodle.warwick.ac.uk/course/view.php?id=42224> 5. Wellbeing support services <https://warwick.ac.uk/services/wss> 6. Numerous online courses provided by the University library to help in academic referencing, writing, avoiding plagiarism and a number of other useful resources. <https://warwick.ac.uk/services/library/students/your-library-online/> |