

2024 ASSESSMENT REPORT

DSD315124 DATA SCIENCE AND DIGITAL SOLUTIONS

Introduction

Data Science and Digital Solutions was a new course in 2024 and students submitted a wide array of different folio topics for assessment. In general, the majority of folios that were submitted were completed at a satisfactory to commendable level with only a few providing good evidence to all that was expected in the external assessment specifications. It is important that candidates and teachers read through the following information as it provides valuable insight on what needs to be done and what to avoid, to achieve successful outcomes for the major folio.

A number of students did well in some parts of the folio but did not do well overall (i.e., they spent a significant amount of time on certain sections). Some students chose to submit all their work for the entire year, in this circumstance only the folio was extracted from the files submitted and the other files disregarded.

Key Recommendations for Success

Understand Assessment Criteria

Students must be fully aware of which criteria are being assessed in each section, as this will help them tailor their responses effectively. The assessment criteria provide a roadmap for what is expected in each section, and aligning the responses with these criteria can significantly impact the overall score. Some students provided strong but misaligned responses in incorrect sections, leading to a loss of marks. For example, a detailed analysis meant for the research analysis essay might have been included in the design brief, resulting in a misallocation of effort.

Use of Digital Tools

Many students effectively used diagramming tools such as draw.io for flowcharts and system diagrams, which is encouraged. These tools help in visually representing complex information, making it easier to understand and analyse. For example, a well-constructed flowchart can clearly illustrate the steps in a process, while a system diagram can show the relationships between different components of a system.

Technical Writing and Referencing

The strongest folios demonstrated clear, effective communication using technical terms, supported by well-referenced diagrams, tables, and URLs. Technical writing requires precision and clarity, ensuring that the information is presented in a logical and coherent manner. Proper referencing is also essential to give credit to original sources and allow readers to verify the information.

Folio (Digital Solutions Project)

When producing a folio, students should include the following parts:

Project Proposal

Criteria Assessed: 1 and 4

Although listed second in the external assessment specifications, stronger students placed this section at the start of their folio, providing a clear project roadmap. A well-structured project proposal sets the stage for the entire folio, outlining the research problem, background research, project management approach, stakeholder engagement plan, and pitch or presentation.

Recommendations for Success:

- Clearly define the research problem with context and justification. This involves identifying a specific issue or challenge that the project aims to address and providing a rationale for its significance.
- Provide detailed stakeholder analysis and project management considerations. This includes identifying key stakeholders, understanding their needs and expectations, and outlining a project management plan to ensure the project stays on track.
- Use a structured format to ensure clarity and alignment with assessment criteria. A well-organised proposal makes it easier for assessors to follow the logic and flow of the project.

Design Brief

Criteria Assessed: 1, 2, 4 and 8

Most students submitted well-structured design briefs outlining their design process effectively. A design brief serves as a blueprint for the project, detailing the design process, constraints, target audience, and technical considerations.

Recommendations for Success:

- Ensure alignment with the project proposal to maintain a logical flow. The design brief should build on the project proposal, providing more detailed information on the design process and how it addresses the research problem.
- Include annotated diagrams or sketches to communicate design intent. Visual aids such as diagrams and sketches can help convey complex ideas more effectively.
- Clearly outline constraints, target audience, and technical considerations. This includes identifying any limitations or challenges that may impact the design, understanding the needs and preferences of the target audience, and considering technical requirements.

Research Analysis Essay

Criteria Assessed: 3, 4 and 8

While most essays were well-structured, many lacked sufficient depth in terms of research, with fewer than ten references cited. A strong research analysis essay requires thorough research, critical analysis, and proper citation of sources.

Recommendations for Success:

- Integrate at least 10 high-quality sources, properly cited. High-quality sources include peer-reviewed journals, reputable websites, and authoritative books.
- Critically analyse research findings rather than merely summarising them. This involves evaluating the strengths and weaknesses of the research, identifying gaps, and drawing meaningful conclusions.
- Use data and case studies to support arguments. Data and case studies provide concrete evidence to back up claims and enhance the credibility of the essay.

Feasibility Study

Criteria Assessed: 1, 2, 4 and 8

Many students lacked a clear understanding of feasibility studies, limiting their effectiveness. A feasibility study assesses the practicality and viability of a proposed project, considering technical, economic, and logistical factors.

Recommendations for Success:

- Address technical, economic, and logistical feasibility comprehensively. This involves evaluating the technical requirements, cost implications, and logistical considerations of the project.
- Use quantitative data where possible to justify feasibility. Quantitative data provides objective evidence to support the feasibility assessment.
- Clearly differentiate feasibility considerations from research analysis. While research analysis focuses on understanding the problem and potential solutions, feasibility considerations assess the practicality of implementing those solutions.

Systems Analysis of the Systems Development Process

Criteria Assessed: 1, 2, 3 and 4

Some students incorrectly merged this section with design production, leading to weak analysis. Systems analysis involves examining the existing environment and identifying areas for improvement before developing a new system.

Students should provide evidence of following a structured approach, including:

- scribed interviews, surveys, and analysis of the current system
- data analysis (data flow, data structures)
- case development, prototypes, and risk analysis
- stakeholder communications.

Recommendations for Success:

- Conduct a structured analysis of the existing environment before developing the system. This includes understanding the current processes, identifying pain points, and gathering requirements.
- Include surveys, interviews, and data analysis to support findings. Surveys and interviews provide valuable insights from stakeholders, while data analysis helps identify trends and patterns.
- Clearly document how insights from this analysis inform the design phase. The findings from the systems analysis should guide the design process, ensuring that the new system addresses the identified issues.

Design Production

Criteria Assessed: 1, 3 and 8

This section requires explicit articulation of the design process, yet many students provided minimal justification for their decisions. Design production involves creating and refining the design based on feedback and testing.

Recommendations for Success:

- Include clear, annotated photographs or screenshots. Visual aids such as photographs and screenshots help illustrate the design process and final product.
- Provide a justification for design choices, referencing user feedback. Justifying design choices based on user feedback demonstrates a user-centred approach.
- Demonstrate the evolution of the design through iterations. Iterative design involves refining the design based on feedback and testing, leading to continuous improvement.

Testing and Prototyping

While not outlined as an exclusive heading in the external assessment specifications document, students are encouraged to provide:

- testing methodology and/or experimental design
- evidence of data collection and analysis
- refinements based on feedback.

Recommendations for Success:

- Develop a clear, structured testing plan. A testing plan outlines the testing methodology, criteria, and procedures to ensure thorough and systematic testing.
- Use real user feedback to guide improvements. User feedback provides valuable insights into the usability and effectiveness of the design.
- Present evidence of iterative prototyping and refinements. Iterative prototyping involves creating and testing multiple versions of the design, making improvements based on feedback and testing results.

Resolved Final Design Solution

Criteria Assessed: 1

Since students cannot submit functional applications (e.g., Excel spreadsheets, software), visual representation is essential. The final design solution should be presented in a clear and visually appealing manner.

Recommendations for Success:

- Include clear screenshots, annotations, and diagrams. Visual aids such as screenshots, annotations, and diagrams help convey the final design solution effectively.
- Utilise video submission effectively (max. 5 minutes) to highlight key features. A video submission can provide a dynamic and engaging way to showcase the final design solution.
- Ensure that the video supplements rather than repeats content in the folio. The video should highlight key features and provide additional context, rather than repeating information already included in the folio. This ensures that the video adds value and enhances the overall presentation.

Conclusion

While many students demonstrated a strong understanding in certain areas, a more balanced approach across all folio sections is necessary for higher achievement. Understanding the criteria, maintaining clear structure, using appropriate research methodologies, and adhering to referencing protocols are all critical components of success. Teachers and students are encouraged to use these insights to guide submissions, ensuring a comprehensive and well-supported folio that meets external assessment specifications.