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# Lessons from practice: Implementing project-based learning in a water engineering course

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This paper presents a case study on the redesign of assessment in a second-year water engineering course using a project-based learning (PjBL) model with scaffolded learning supports and a scaffolded assessment design, culminating in an individual viva voce. The redesign was initiated in response to academic integrity concerns in online exams. Drawing on a design-based research approach, the study analysed seven years of course data (2018 to 2024), student feedback, and instructor reflections. Key findings indicate that the PjBL model improved student engagement, academic integrity, and learning outcomes by aligning assessment more closely with industry practice. The viva voce enabled nuanced assessment of individual understanding, while scaffolded support strategies including tutorials, checkpoints, and multimodal delivery contributed to sustained learning. However, the model requires significant instructional effort and raises challenges for scalability in large cohorts. The paper concludes with practical insights for educators implementing PjBL in STEM contexts, particularly regarding authentic assessment design and the role of oral assessments in promoting academic integrity.

*Keywords:* authentic assessments, engineering education, feedback, oral exam, project-based learning, viva voce

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## Introduction

The shift toward authentic, student-centred learning in engineering education has accelerated in response to concerns about academic integrity and student disengagement with traditional assessments (Openo, 2024). Online exams, widely adopted during the COVID-19 pandemic, addressed logistical challenges but introduced new pedagogical issues, with studies reporting shallow learning and increased academic misconduct (Garg & Goel, 2022; Yorke et al., 2020).

Project-based learning (PjBL) is recognised for fostering deep learning, teamwork, creativity, communication, and professional readiness in engineering students (Kolmos & de Graaff, 2014; Miao et al., 2024; Poonsin & Jansoon, 2021). Chen et al. (2022) showed that integrating creative thinking strategies within PjBL enhances students' creativity, satisfaction, and engagement. In a hydraulics and hydrology module, Das et al. (2024) found that PjBL significantly improved applied learning and critical thinking when supported by strong scaffolding and clear communication. Likewise, Zhang and Ma's (2023) meta-analysis confirmed that PjBL yields the greatest gains in engineering and technology disciplines, aligning with the design-oriented nature of the field.

Despite this evidence, limited research has examined how oral assessments such as viva voce can complement scaffolded PjBL to strengthen academic integrity. Oral exams can reveal gaps in understanding that written tasks may conceal (Sotiriadou et al., 2019), yet their systematic use in engineering curricula remains underexplored. Recent studies further highlight the value of diversifying assessment through oral and applied tasks (Islam, 2024; Joshi et al., 2025).

The rapid rise of generative AI tools (e.g., ChatGPT, Gemini) has introduced new challenges for assessment design. Written tasks are increasingly susceptible to automation, raising concerns about the validity of traditional reporting formats (Weng et al., 2024). Authentic, open-ended assessments paired with viva voce offer a potential solution by requiring real-time reasoning, justification, and professional communication (Pradhan & Kreglicki, 2021). However, empirical evidence on how such approaches enhance learning and uphold academic integrity remains limited.

This study addresses this gap by analysing the redesign of a second year water engineering course that integrated a scaffolded PjBL model with an individual viva voce. It examines how this approach influenced student learning, engagement, and academic integrity within the context of online assessment and emerging AI challenges.

The central research question guiding this study is:

> Can a scaffolded project-based model with viva voce assessments enhance student learning, engagement, and academic integrity in undergraduate engineering education?

## Methods

### Context

Introduction to Water Engineering (IWE) is a core second year course in the undergraduate civil engineering programs at the University of South Australia (UniSA). The course introduces key concepts in fluid mechanics and water quality. It previously relied on a traditional assessment model with a final exam worth 50% of the grade. During the COVID-19 pandemic, the course shifted to a non-invigilated online exam, raising concerns about academic integrity and encouraging strategic, grade-focused learning rather than deep engagement.

In response, the course was redesigned to replace the final exam with a project-based assessment model guided by three pedagogical principles: authenticity (real-world, open-ended tasks), academic integrity (individualised tasks and viva voce), and engagement (ownership and motivation).

### Research design and data sources

This study adopts a design-based research (DBR) approach to examine the implementation of a scaffolded project-based assessment model in a second year engineering course. Grounded in an authentic teaching context, the research aims to improve assessment design while analysing its impact on engagement, learning, and academic integrity. DBR supports iterative design and reflective evaluation in real-world settings (Wang & Hannafin, 2005), making it suitable for practice-oriented educational studies.

The 2021 redesign represents the first major DBR iteration, replacing the traditional exam with a scaffolded project and individual viva voce. Subsequent offerings (2022 to 2024) introduced refinements such as additional project checkpoints, structured viva preparation, and explicit discussions on the ethical use of generative AI. While not separate DBR cycles, these adjustments reflect the adaptive, reflective nature of DBR. Future research will extend the model across courses to support broader validation and refinement.

Although this study focuses on a single DBR iteration, refinements were informed by instructor reflection and student feedback collected between 2021 and 2024. Students who withdrew or had incomplete records were excluded. All data were de-identified. This study received ethics approval from the UniSA Human Research Ethics Committee (Reference No: 206885).

A mixed-methods approach was used to examine the impacts and practical implications of the redesigned assessment. Data sources included:

1. Course evaluation feedback (2018–2024): Open-ended student comments from institutional evaluations.
2. Course performance data (2018–2024): Grade distributions, pass/fail rates, and distinctions across seven cohorts.
3. Instructor reflections: Insights from teaching notes, tutorials, viva observations, and reflective discussions, providing practical perspectives on feasibility, challenges, and student learning.

Descriptive quantitative analysis of course performance was combined with qualitative insights from student feedback and tutor reflections.

## Student demographics

The case study focuses on a core undergraduate engineering course taught at UniSA between 2018 and 2024. This timeframe reflects the period for which researchers had access to student data and approval to implement and evaluate assessment changes; earlier data were excluded.

As shown in Table 1, enrolments in IWE declined sharply following the onset of the COVID-19 pandemic, from 70–71 students in 2018–2019 to 39 in 2023, before recovering to 61 in 2024. The cohort was predominantly male (77–87%) and mostly under 25 years old. The proportion of international students fell from 59% in 2018 to 33% in 2024, reflecting broader post-pandemic enrolment trends.

All students were enrolled on-campus in South Australia, with no nationally or internationally distributed participants, even during periods of remote learning. Information on prior engineering experience or concurrent industry employment was unavailable and therefore excluded from the analysis.

**Table 1:** Demographic profile of IWE students (2018–2024)

| Year | No. of Students | Male (%) | Female (%) | Local (%) | International (%) | <25 years (%) | >25 years (%) |
|---|---|---|---|---|---|---|---|
| 2018 | 71 | 80 | 20 | 41 | 59 | 80 | 20 |
| 2019 | 70 | 77 | 23 | 47 | 53 | 87 | 13 |
| 2020 | 61 | 85 | 15 | 56 | 44 | 84 | 16 |
| 2021 | 51 | 80 | 20 | 67 | 33 | 90 | 10 |
| 2022 | 51 | 86 | 14 | 65 | 35 | 88 | 12 |
| 2023 | 39 | 87 | 13 | 69 | 31 | 77 | 23 |
| 2024 | 61 | 85 | 15 | 67 | 33 | 92 | 8 |

## Assessment design and implementation

The course originally followed a traditional assessment model with a final exam worth 50%. Concerns about academic integrity and low engagement during online delivery prompted a 2021 redesign centred on PjBL and an individual viva voce (see Table 2 for details).

**Table 2:** IWE course assessment details and weightings

| Assessment component | Weighting | Description |
|---|---|---|
| Continuous assessment | 10% | Weekly review questions aligned with lecture content and assessed in tutorials |
| Tests | 10% | Short, in-class quizzes assessing conceptual understanding |
| Practicals | 40% | 2-hour labs with Excel-based reports demonstrating data handling and interpretation. |
| Design project and viva voce | 40% | Semester-long group project on stormwater harvesting and reuse, culminating in a detailed design report (75%) and a 10-minute individual viva voce (25%) |

The new structure incorporated scaffolded assessments and learning supports, including weekly review questions, short quizzes, practical reports, and a semester-long team design project on stormwater harvesting and reuse. Teams of three to four students commenced design work after completing foundational theory in Week 5, supported by weekly tutorials for feedback and technical guidance. Each student was responsible for specific design components and reviewed peers' work, promoting both accountability and a holistic understanding of the project.

Final deliverables included a group report and a 10-minute individual viva voce. Core questions (Appendix A) focused on each student's design responsibilities, followed by tailored probes exploring assumptions, decisions, and alternatives. This adaptive format minimised rehearsed responses and enabled assessment of higher-order thinking, synthesis, and professional judgement.

While the redesign focused on assessment, it also embedded scaffolded learning strategies – staged checkpoints, structured tutorials, and ongoing formative feedback, to support student development. The intended learning outcomes remained unchanged; rather, the redesign enhanced alignment between outcomes, authentic assessment, and learning supports, strengthening both pedagogy and assessment integrity.

## Scaffolded learning strategies (assessments and teaching support)

The redesigned model incorporated scaffolding at two levels: learning supports (structured tutorials, multimodal resources, peer review) and assessment design (sequential project tasks, checkpoints, viva voce). These strategies guided students from foundational knowledge to complex, open-ended problem-solving while maintaining engagement and accountability.

In this study, scaffolded learning refers to instructional supports (e.g., tutorials, resources, formative feedback) that build student capability over time, while scaffolded assessment refers to a structured progression of tasks (e.g., quizzes, review questions, design project, viva voce) allowing students to demonstrate increasingly complex skills. Scaffolding was embedded throughout the semester. Table 3 summarises the operationalisation in the IWE course.

**Table 3:** Scaffolded project-based learning strategies and activities to support learning adopted in the IWE course

| Phase | Key strategies |
|---|---|
| Framing the challenge | Provide a real-world engineering problem<br>Define the design challenge and scope |
| Foundational knowledge | Deliver core concepts through lectures, videos, and readings<br>Reinforce learning through laboratory sessions<br>Provide guided examples and practice problems |
| Project support | Support team formation and define student roles and responsibilities<br>Require teams to break down the project into smaller, sequential design tasks<br>Establish regular checkpoints for feedback and support<br>Encourage peer collaboration and inquiry within and across groups |
| Feedback | Facilitate peer feedback within and across teams<br>Tutors to provide formative feedback throughout the project stages<br>Use peer review to broaden project understanding and critique |
| Assessment and evaluation | Project report (group, summative)<br>Viva voce (individual, summative)<br>Peer assessment via SPARKPlus (summative) |

## Findings and discussion

This section presents outcomes of the teaching and assessment redesign, focusing on academic performance, engagement, academic integrity, and inclusivity, drawing on seven years of course data (2018 to 2024), tutor reflections, and student feedback.

### Student learning and academic performance

The 2021 shift to a scaffolded, project-based assessment with individual viva voce corresponded with improved performance. Fail rates dropped significantly post-redesign (Figure 1), while the 2020 spike in high distinctions (Figure 2) highlighted concerns over non-invigilated online exams. Post-2021 grade distributions were more consistent, indicating steadier attainment across the cohort.

**Figure 1:** Fail rates in IWE (2018-2024)

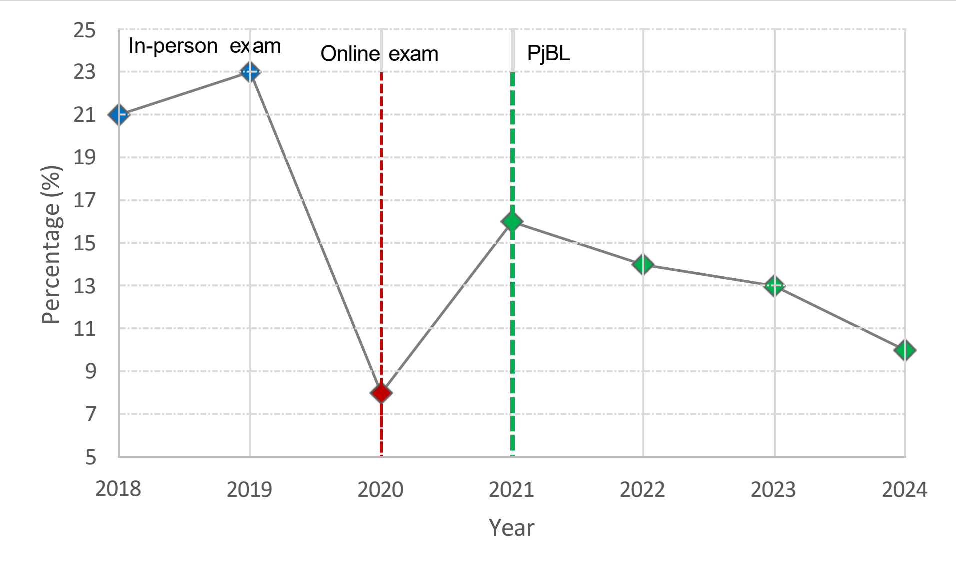
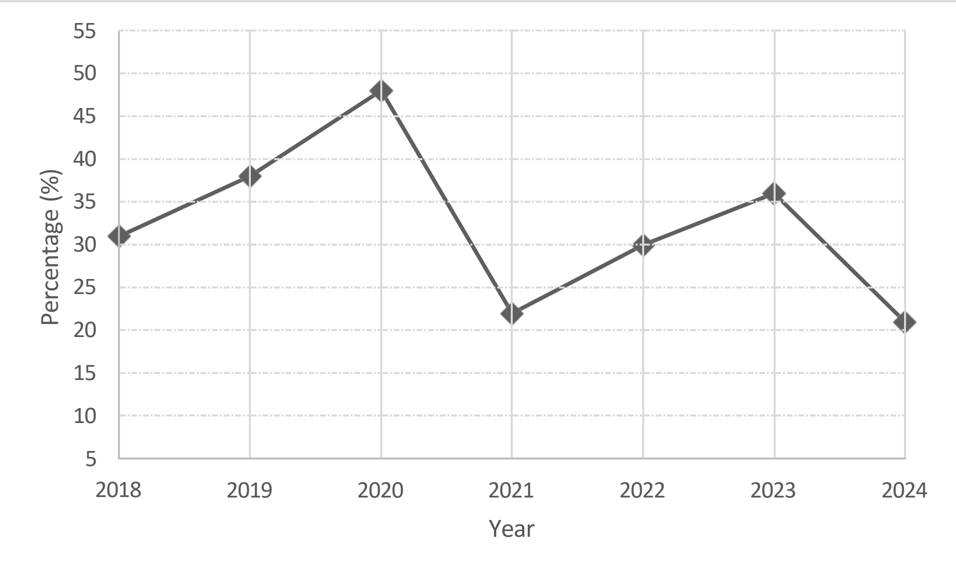



**Figure 2:** Distinction and high distinction trends in IWE course from 2018-2024




Evidence of deeper learning emerged from multiple sources. Tutors observed students applying knowledge across contexts, integrating hydraulics, hydrology, and water quality, and critically evaluating design assumptions. The viva voce enabled precise assessment of individual understanding within group projects, revealing reasoning and problem-solving not always evident in written reports. Student feedback corroborated this, noting increased confidence in tackling open-ended, real-world problems and a shift from formulaic recall to authentic problem-solving. These outcomes indicate progression to higher-order cognitive skills consistent with Bloom's taxonomy, showing the redesign facilitated learning beyond mere grade attainment.

## Student engagement and motivation

Enhanced engagement was a prominent outcome of the project-based approach. Tutorial observations indicated that from Week 5 onwards, when students actively worked on design projects, engagement increased markedly. Students collaborated within and across teams, sharing assumptions, troubleshooting issues, and comparing design strategies, consistent with inquiry-based project learning principles.

Student feedback emphasised the relevance and authenticity of tasks. One student noted, “The final assignment helped with learning more than an exam would and made each person learn the course material rather than cram.” Another commented, “The major project summarised everything we had been taught into a real-life scenario.” Several students highlighted laboratory experiments as enhancing understanding: “We did experiments in the lab that showed how class concepts work in real life… I feel ready to tackle anything related to water connections in the future.”

### Academic integrity and individual accountability

Academic integrity was reinforced through unique project parameters, individual viva voce, and SPARKPlus peer assessment (Freeman & McKenzie, 2002). Written reports were submitted via Turnitin for similarity checking and referencing review. Clear guidance was provided on ethical use of generative AI: students could use AI for brainstorming but not to replace individual reasoning, analysis, or authorship, with referencing requirements reinforcing integrity.

The viva required students to justify their design decisions, making it difficult to conceal a lack of understanding, while peer evaluation moderated marks and highlighted uneven contributions. Tutor reflections confirmed that less engaged students struggled in the viva, whereas active contributors defended their choices confidently. Direct evidence of strengthened integrity is provided by the absence of formal misconduct cases between 2021–2024 and no anomalous grade inflation post-2022 (see Figure 2), despite the rise of generative AI tools. Together, these mechanisms promoted accountability, authentic engagement, and professional awareness, supporting previous research that authentic assessment deters misconduct and encourages deep learning (Sotiriadou et al., 2019).

To reduce anxiety and support students with difficulties in oral communication, we implemented several strategies. Continuous guidance was provided throughout tutorials to prepare students for the viva. The interview environment was made friendly to minimise stress. Additionally, students were encouraged to use whiteboards, paper, and pens to illustrate ideas during the viva, allowing those less confident in verbal expression to communicate their understanding effectively.

The rise of GenAI has heightened concerns around assessment integrity, particularly in written reports where tasks can be offloaded to AI systems. In this context, the viva voce acted as a critical safeguard by exposing gaps in understanding that AI-generated text could not mask. Students who had not genuinely worked on the project struggled to defend their choices or respond to follow-up questions, while engaged contributors demonstrated authentic reasoning. These findings align with emerging literature, which highlights the value of authentic and oral assessments in mitigating risks posed by GenAI (Sotiriadou et al., 2019; Openo, 2024). Together, these mechanisms promoted accountability, professional awareness, and deeper engagement.

### Tutor reflection on feasibility and value

Designing and coordinating the new assessment structure required considerable effort, particularly in scheduling and conducting 50 to 70 viva sessions. However, the outcomes clearly demonstrated its value. The viva voce offered insights into student thinking not evident in written reports and enabled a more nuanced assessment of individual contributions within group work.

Implementing project-based learning (PjBL) at scale presents both logistical and pedagogical challenges. Developing authentic, open-ended tasks aligned with learning outcomes and industry relevance demands substantial time and planning. These observations echo broader findings that PjBL is time-intensive and often difficult to align with rigid curricula (Shekhar & Borrego, 2017). Success depends on the quality of task design, instructor facilitation, and assessment clarity. Similarly, Vesikivi et al. (2019) highlight the value of collaborative instructional models such as team teaching, which, although not formally adopted here, was mirrored through informal tutor collaboration to ensure consistency and responsiveness.

Students showed strong engagement and deeper learning through the scaffolded project, though challenges persisted in managing team dynamics and ensuring equitable contributions. These outcomes align with Das et al. (2024), who found that while PjBL enhances motivation and critical thinking, it also presents difficulties in collaboration and access to timely support. This reinforces the importance of scaffolding, formative checkpoints, and structured peer evaluation (SPARKPlus) in maintaining accountability and momentum.

Although the individual viva voce promoted integrity and higher-order skills, it added workload pressures for staff. Sustainability was achieved through time-limited sessions, shared coordination, and standardised rubrics. For larger cohorts, institutional support such as additional tutors, digital viva formats, or team teaching will be essential for scalability.

Overall, the PjBL model strongly aligns with the learning needs and graduate attributes of engineering students. It enhanced learning outcomes, integrity, and transferable skills in teamwork, communication, problem solving, and reflection – skills critical for professional practice.

Lessons from practice emerging from this work include:

1. Scaffolded viva tasks strengthen accountability and reduce misconduct
2. Iterative checkpoints sustain engagement throughout the semester
3. Authentic assessment strengthens engagement and links theory to real-world engineering practice
4. Institutional support and workload planning are essential for scaling the model effectively.

These insights can inform future course design and support educators in developing sustainable, integrity-focused assessment practices across engineering disciplines.

## Conclusion and future directions

This study found that scaffolded project-based learning, combining group design projects with individual viva voces, enhanced student engagement and learning outcomes while reducing academic misconduct. The approach aligned assessment with real-world engineering practice and allowed authentic evaluation of individual understanding. Student feedback and performance trends support its effectiveness, and its scaffolded structure accommodated diverse learners. However, the model is resource-intensive, highlighting the need for careful planning and institutional support for wider implementation.

While the model proved pedagogically effective, its implementation required substantial instructional effort, raising challenges for scalability. Future work should explore strategies to support wider adoption, including team teaching, digital scaffolding tools, and structured peer or AI-assisted feedback systems.

## Disclosure of conflicts of interest

The authors report no potential conflict of interest.

## Disclosure of the use of AI-assisted technologies during writing

The authors used ChatGPT for the purpose refining written expression throughout the article. The authors take full responsibility for the content.

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## Appendix A: Sample viva questions:

Note: Each student must respond to two sections during viva: their own design area and one section they reviewed and verified from another team member's work.

**Runoff conveyance from roof catchment to detention basin**

**1.1.** How did you determine the peak flowrate when designing the downpipes? Can you list any assumptions made?

**1.2** What was the runoff catchment used in this study? Explain the process you used to calculate the peak flow from the catchment. What are the influential parameters in this calculation?

**1.3** What was the pipe material you chose for stormwater conveyance from roof to detention basin? Why did you choose this material? How did the material type influence in your design calculations?

**1.4** Imagine that you get an 87mm as the size of the required pipe to carry peak flow, as per your design calculations. How do you determine the actual pipe size for the final design?

**1.5** Are there any assumptions you have made when designing pipe size to convey stormwater into the detention basin?

**1.6** What are the head losses you have considered when sizing the pipe in this design calculations?

**1.7** What assumptions did you make during the design process, and how might these assumptions impact the accuracy of your results?

**1.8** If the available head was lower than the required head for peak flow, what design changes would you consider meeting the project requirements?

**Detention basin dam and outflow drainage**

**2.1** How would you calculate the minimum width of the trapezoidal dam?

**2.2** Explain the 'middle third rule' you have used to design the dam.

**2.3** What formulae and principles did you use to design the outflow drainpipe?

**2.4** How does the choice of pipe diameter and material impact the emptying time?

**2.5** How would you optimize the pipe diameter to meet the 24-hour emptying requirement? If the required emptying time isn't met with your design, how would you adjust the pipe diameter or material?

**2.6** Explain the difference between using the slice method against the integration method for calculating emptying time. Which method you prefer in general and why?

**2.7** What is meant by flow under varying head in reservoir emptying? Why is it significant?

**2.8** How can we estimate the time required to empty an irregular shaped reservoir?

**2.9** What assumptions did you make during the design process, and how might these assumptions impact the accuracy of your results?

**2.10** How would you modify your design if future development increased the impervious area on the property?

**Bioretention basin design**

**3.1** Can you explain the purpose of a bioretention basin in stormwater management?

**3.2** What are the essential components of a bioretention system? (Hydraulic controls, vegetation, raised outlet, Filter media)

**3.3** How did you determine the surface area required for the biofiltration system?

**3.4** How does the impervious area of the catchment contribute to the size and design of the biofiltration system?

**3.5** What factors influenced your estimation of ponding depth and hydraulic conductivity?

**3.6** What is the role of plants/vegetations in a bioretention basin?

**3.7** What characteristics make certain plant species effective for biofilters?

How does the biofiltration system reduce concentrations of pollutants like nitrogen, phosphorus, total suspended solids, and pathogens?

**3.8** What are the guiding principles/criteria that you use when choosing appropriate plants for a bioretention system? (survival under sandy low nutrient env, compatibility with local climate, mixture of species, aesthetic, biodiversity, effective characteristics)

**3.9** What assumptions did you make during the design process, and how might these assumptions impact the accuracy of your results?

**3.10** What environmental benefits does a biofiltration basin offer beyond pollutant removal?

**3.11** How did you estimate the construction costs for this biofiltration system?

**Conveyance of treated water to overhead tank for reuse**

**4.1** When you choose a pump and pipe combination for this design what were the factors you considered?

**4.2** How did you determine the operating point of the pump when it is connected to the rising main?

**4.3** How did you determine which pump and pipe combination would be most suitable for this system?

**4.4** Can you explain how pipe diameter and roughness impact the performance of the system?

**4.5** How do you calculate the system curve, and why is it important in pump selection?

**4.6** What components contribute to the total annual cost of the system, and how did you account for them?

**4.7** How does the initial cost of the pump and pipes compare with their annual energy cost over the lifetime?

**4.8** How did you obtain the best combination of pump and rising main (delivery pipe) when you have more than one choice?

**4.9** How would an increase in energy costs affect the overall system cost and choice of pump?

**4.10** What assumptions did you make during the design process, and how might these assumptions impact the accuracy of your results?

**Gravity fed irrigation system**

**5.1** What governing principles (equations) did you use to determine flow through branching pipelines?

**5.2** What were your considerations when you choose a pipe material for the gravity fed irrigation system?

**5.3** Why is pipe diameter important in a gravity-fed irrigation system, and how does it affect flow rate?

**5.4** Can you explain the role of pipe roughness in the design and its effect on water flow?

**5.5** What parameters controls pipe friction? Explain the equation used to calculate friction losses in a pipe and the influence of parameters.

**5.6** What were the losses accounted in minor loss calculations when designing the gravity - fed irrigation system?

**5.7** How would you adjust pipe diameters to increase flow uniformity between QA and QB?

**5.8** What assumptions did you make during the design process, and how might these assumptions impact the accuracy of your results?

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## Appendix B: Viva assessment rubric

| **Criteria** | **Excellent (HD/D)** | **Good (C)** | **Satisfactory (P)** | **Limited (F)** | **Score (out of weighting)** |
|---|---|---|---|---|---|
| Conceptual understanding & knowledge (30%) | □ Comprehensive, accurate, deep integration of theory & design | □ Good understanding, minor gaps | □ Partial understanding, superficial links | □ Minimal/incorrect | _____/40 |
| Problem-solving & critical thinking (30%) | □ Strong justification, clear assumptions, adapts to follow-ups | □ Clear reasoning, acknowledges assumptions | □ Limited justification, struggles with follow-ups | □ Unable to justify/adapt | _____/40 |
| Communication & professionalism (20%) | □ Clear, confident, professional | □ Mostly clear, minor lapses | □ Adequate, hesitant, limited technical language | □ Unclear, hesitant, unprofessional | _____/20 |

## Appendix C: Design report assessment rubric

| Criteria | Excellent (HD/D) | Good (C) | Satisfactory (P) | Limited (F) | Weight |
|---|---|---|---|---|---|
| Technical accuracy & application of engineering principles | Solutions are rigorous, accurate, and demonstrate advanced application of engineering principles; integrates multiple concepts effectively. | Solutions mostly accurate; minor errors that do not affect validity of outcomes; good application of engineering principles. | Some correct application but notable errors; limited integration of theory and design. | Major errors, misapplication of principles; little or no evidence of correct engineering practice. | 30% |
| Problem-solving & design justification | Design decisions are fully justified with clear reasoning, evaluation of alternatives, and well-documented assumptions. | Most design decisions justified; assumptions noted; some discussion of alternatives. | Limited justification; assumptions only partially stated; minimal discussion of alternatives. | Weak or absent justification; assumptions unclear; no evidence of critical evaluation. | 20% |
| Data use, analysis & tools | Data sources appropriate, accurate, and well-integrated; correct use of calculation tools and analysis. | Data sources appropriate and mostly accurate; minor errors in analysis or tool use. | Limited or partially correct use of data/tools; some inappropriate sources or errors in analysis. | Inappropriate or missing data; incorrect or absent use of tools; analysis flawed. | 20% |
| Report structure, clarity & professional communication | Report is logically structured, concise, and professionally presented; writing clear and precise with excellent use of technical language. | Report generally well-structured and clear; minor lapses in clarity, conciseness, or technical accuracy. | Report somewhat disorganised; communication adequate but unclear at times; limited use of technical language. | Report poorly organised, unclear, or unprofessional; incorrect or inappropriate language. | 10% |
| Figures, tables & visual presentation | Figures/tables are accurate, well-labelled, integrated into discussion; diagrams enhance clarity of design. | Figures/tables mostly accurate and labelled; some integration into discussion. | Figures/tables present but limited accuracy, clarity, or integration. | Figures/tables missing, inaccurate, or poorly presented. | 10% |
| Referencing & academic integrity | Sources are comprehensive, current, and referenced accurately using APA refereeing style; strong evidence of independent research. | Sources relevant and mostly accurate; referencing style followed with minor errors. | Limited range of sources; some referencing errors or inconsistencies. | Sources missing or inappropriate; referencing absent or flawed. | 10% |