![Government of Western Australia — School Curriculum and Standards Authority]

Summary report of the 2022 ATAR course examination report:
Engineering Studies

Year	Number who sat	Number of absentees
2022	233	4
2021	254	2
2020	228	5
2019	198	3

The number of candidates sitting and the number attempting each section of the examination can differ as a result of non-attempts across sections of the examination.

Examination score distribution–Written
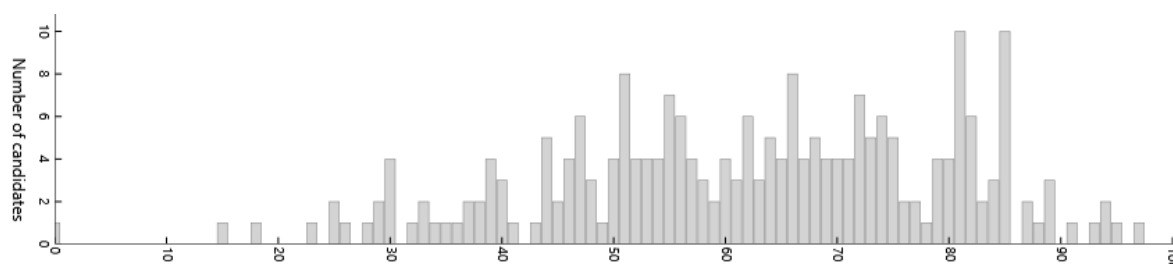
Summary

The examination included questions ranging in accessibility, from straightforward to rigorous, in all three sections of the paper and this allowed all candidates to demonstrate their knowledge and understanding.

There was a wide range in the standard of written responses. Some candidates provided logical and complete written answers with an Engineering focus, whilst others provided superficial responses. The calculations presented by candidates also ranged from being logical, well set-out and well-structured, to unclear, illegible or not attempted. Overall, the mean demonstrated that the questions in the examination were at an appropriate level.

Attempted by 233 candidates   Mean 59.83%   Max 96.02% Min 0.00%

Section means were:
Section One: Core content Part A: Multiple-choice
                                           Mean 70.43%
Attempted by 233 candidates   Mean 7.04(/10)   Max 10.00   Min 0.00
Section One: Core content Part B: Extended answer
                                           Mean 64.27%
Attempted by 232 candidates   Mean 19.28(/30)   Max 28.85   Min 0.00
Section Two: Mechanical Part A: Multiple-choice
                                           Mean 65.18%
Attempted by 85 candidates   Mean 6.52(/10)   Max 10.00   Min 1.00
Section Two: Mechanical Part B: Extended answer
                                           Mean 53.72%
Attempted by 83 candidates   Mean 26.86(/50)   Max 46.59   Min 0.00

Section Two: Mechatronics Part A: Multiple-choice
                                               Mean 57.97%
Attempted by 148 candidates   Mean 5.80(/10)   Max 10.00   Min 0.00
Section Two: Mechatronics Part B: Extended answer
                                               Mean 55.57%
Attempted by 146 candidates   Mean 27.79(/50)   Max 49.09   Min 0.00

General comments

The length of each section seemed appropriate, as overall candidates appeared to have sufficient time to answer all the questions. Some candidates could not complete, or did not attempt, all parts of the examination. The mark allocation for each question was considered appropriate for the amount of work required. The final marks demonstrated a good spread, indicating that the paper suitably discriminated between candidates.

Advice for candidates

- Read all questions carefully before you attempt to answer them.
- For multiple-choice questions, you need to ensure you relate each option back to the initial statement. Use the space next to the question for working if necessary.
- For extended answer questions, carefully read all information provided before attempting each part of the question.
- For extended answer questions involving calculations, ensure you include all relevant equations in your working.
- Ensure you set out all working neatly, as this may allow for the awarding of part marks if the final numerical answer is incorrect. If your working is not able to be followed, or is unclear, you may not be awarded part marks.
- If you make an error in any answer, ensure sure you put a line through the working you do not want considered for marking.
- Become familiar with the Data book so that you can find relevant information quickly.
- Ensure you use the correct units in both your working and answers.
- Ensure you are clear on the precedence of lines. This is a finer point of conventions for engineering drawings and it is important that you know these details to correctly present specifications to a third party.

Advice for teachers

- Ensure students are familiar with all terminology used in the syllabus.
- Ensure students are familiar with all drawing symbols specific to Engineering Studies.
- Advise students to read all questions carefully before attempting them.
- Stress to students the importance of showing all working in their answers to questions requiring calculations and setting their working out in a way that it can be easily followed.
- Encourage students to write neatly in all written response answers.

Comments on specific sections and questions

Section One: Core content Part A: Multiple-choice (10 Marks)
Questions 4 and 8 had the lowest means. Candidates performed well in most other questions, particularly in Questions 7 and 10.

Section One: Core content Part B: Extended answer (65 Marks)
Overall, this section was completed better than the Extended answer sections in the specialist fields. Question 12 had the lowest mean of 57.1%. Many candidates demonstrated a poor understanding of the correct labelling procedures for drawings. Question 14 had the highest mean of 71.22%.

Section Two: Mechanical Part A: Multiple-choice (10 Marks)
Question 23 had the lowest mean of 49%, followed by Question 17 and 24 with 54%. Candidates performed well in Question 15.

Section Two: Mechanical Part B: Extended answer (100 Marks)
Candidates performed well in Question 27, with a mean of 62.4%. Question 26 generated the lowest mean with 40.48% and there were a number of candidates who did not attempt parts of this question.

Section Two: Mechatronics Part A: Multiple-choice (10 Marks)
Question 35 had the lowest mean of 34%, followed by Question 36 with 36%. Candidates performed well in Questions 38 and 40.

Section Two: Mechatronics Part B: Extended answer (100 Marks)
The mean for this section was 55.57%. Question 42 had the lowest mean of 46.76%, with Question 41 the highest at 62.21%. There were responses to all questions that received maximum marks, this reflected a very good understanding of the topics by these candidates.