

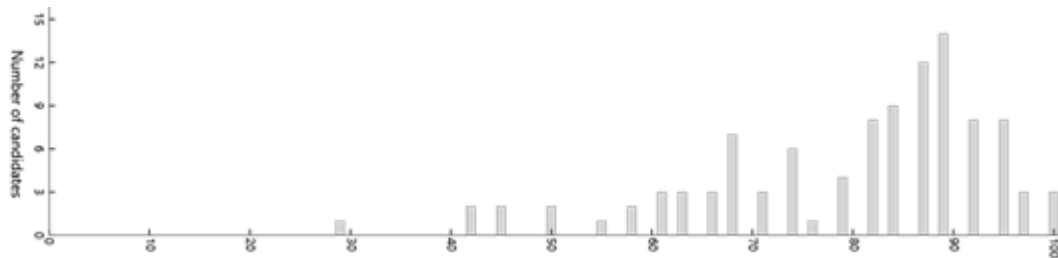


Summary report of the 2021 ATAR course examination report: Materials Design and Technology

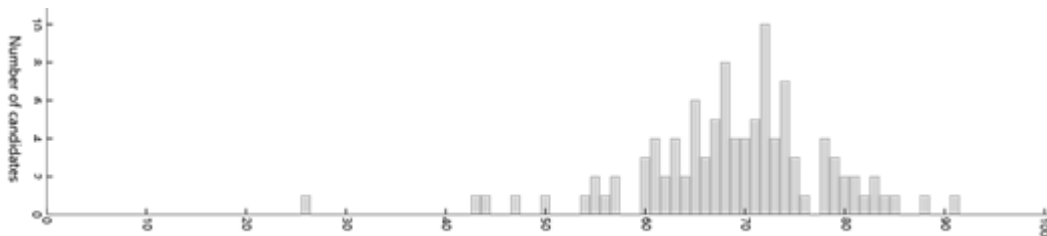
Year	Number who sat all examination components	Number of absentees from all examination components
2021	104	0
2020	107	1
2019	151	1
2018	165	0

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–Practical



Examination score distribution–Written



Summary

Candidate submissions for the practical examination this year showcased an exciting range of sophisticated projects, with notable improvement in the quality of Wood projects. There was a strong demonstration of the understanding and application of course work in the design and production processes recorded in the portfolios.

The quality of the portfolios has improved; the information was clearly organised, and the structure was more cohesive giving good continuity between criteria. The documents were rich and interesting to mark, partly due to the complex nature of the projects which shaped the depth of investigation and problem-solving on offer to candidates.

The high standard of the projects and portfolios indicated that teachers had a clear understanding of the marking key and how best to approach each question, and that they managed their timelines appropriately to give candidates the opportunity to complete their submissions on time.

Candidates generally achieved excellent marks against Criterion 1 and Criterion 6. The standard of both sections has improved significantly with all three contexts averaging 79% or higher for both criteria. This year, Criterion 3 was completed to a better standard, particularly by Wood candidates. Criterion 5 was completed to an excellent standard in all contexts, however, the lack of revised plans cost many candidates marks.

The mean performance of 79.62% reflects the strong performance by the majority of candidates. This speaks to the achievement of maximum scores in Textiles and Wood and 97.37% in Metals.

The written examination was fair, with a strategic range of scaffolded and more challenging questions. The maximum score of 90.28% and the minimum of 26.88% show a wide distribution of performance.

In Section One the maximum mark of 14.30 out of 15 and the minimum mark of 6.09 out of 15 showed that all candidates experienced some success. In Sections One and Two, some candidates achieved the maximum possible marks. Candidates demonstrated sound knowledge and recall of the easier common content in the syllabus, but struggled to apply their understanding of anthropometric data, and cultural and political sources of design inspiration.

The Section Two responses scored moderately well, with a range from 58% to 70%. There was, however, a disappointing response to fundamental content such as occupational health and safety, environmental impacts and sustainability.

Responses to Section Three yielded commensurate mean scores for Textiles 67.15%, Wood 64.51% and Metal 62.47%, reflecting examination equity across the three contexts. The evolution of difficulty across the examination paper allowed for progression and prepared candidates for the context specific questions.

Practical examination

Attempted by 105 candidates	Mean 79.62%	Max 100.00%	Min 28.95%
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Section means were:

Practical Portfolio (Metal)	Mean 77.72%		
Attempted by 15 candidates	Mean 77.72(/100)	Max 97.37	Min 50.00
Practical Portfolio (Textiles)	Mean 86.91%		
Attempted by 37 candidates	Mean 86.91(/100)	Max 100.00	Min 60.53
Practical Portfolio (Wood)	Mean 75.07%		
Attempted by 53 candidates	Mean 75.07(/100)	Max 100.00	Min 28.95

Written examination

Attempted by 104 candidates	Mean 66.30%	Max 90.28%	Min 26.88%
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Section means were:

Section One: Short answer	Mean 74.19%		
Attempted by 104 candidates	Mean 11.13(/15)	Max 14.30	Min 6.09
Section Two: Extended answer	Mean 64.30%		
Attempted by 104 candidates	Mean 16.08(/25)	Max 23.61	Min 2.08
Section Three: Wood	Mean 64.51%		

Attempted by 52 candidates	Mean 38.71(/60)	Max 47.92	Min 18.70
Section Three: Metal	Mean 62.47%		
Attempted by 15 candidates	Mean 37.48(/60)	Max 49.48	Min 22.60
Section Three: Textiles	Mean 67.15%		
Attempted by 37 candidates	Mean 40.29(/60)	Max 53.77	Min 23.77

General comments

The mean of the practical examination (79.62%) reflects that candidates found the examinations across contexts to be fair and equitable. The means across Section Three were comparative between Metal (62.46%), Wood (64.51%), and Textiles (67.15%).

The mean of the written examination (66.30%) indicated both the teachers' and candidates' understanding of the course requirements and marking key.

Practical examination

Advice for candidates

- The Production proposal and Evidence of production are heavily weighted sections of the portfolio. Understanding the difference between these ensures you cover what is required in each section.
- Read the marking key closely to gain an understanding of what is required for each criterion in order to meet this explicitly and with the required amount of detail.
- Link all research and concepts to the client's needs as expressed in the design brief and align these to the design fundamentals.

Advice for teachers

- Continue to encourage students to choose interesting and complex projects that enable them to demonstrate their capabilities and create meaningful portfolios.
- Guide students in recongising the costings of all products, including those that are free when provided by the school. Sundry items such as glue and thread still require acknowledgement in Criterion 4: Production proposal (materials).

Written examination

Advice for candidates

- Materials Design and Technology is a practical subject focused on the production of goods for society. As such, it is concerned with the impact of goods on the environment, and how to reduce this impact. Therefore, be mindful to focus on sustainability, globalisation and green principles.

Advice for teachers

- Review the syllabus content regularly and plan to cover every content point listed. While the Common content and the Nature and properties of materials are the foundation of the course, the content listed in Materials in Context is a rich source of content for teaching and examining.
- While society is focused on the impact of humankind on the environment, the topics of sustainability, globalisation and green principles in manufacturing are fundamental to the study of the course. Ensure time is spent revising these concepts.

Comments on specific sections and questions

Practical examination

Practical Portfolio (Wood) (38 Marks)

Wood candidates performed well in the statement of intent, the production proposal drawings, the visual evidence of production and the finished product and final evaluation. This context achieved the lowest minimum score of 28.95% which was a consequence of those candidates who did not attempt, or produced very poor responses.

Practical Portfolio (Metal) (38 Marks)

The mean of 77.42% reflected candidates' understanding and approach to coursework, including design and production processes. The maximum and minimum scores for this context demonstrated a range of abilities across the small cohort. The maximum mark of 97.37% reflected the excellent quality of work presented.

Practical Portfolio (Textiles) (38 Marks)

The Textiles context achieved an equal highest maximum score of 100% and the highest minimum score of 60.53% which contributed to a high overall mean of 86.91%. Candidates continued to show proficiency in the first three criteria, achieving high mean scores with extensive and explicit investigation of all aspects of the design brief, using multiple research strategies. The performance for this context indicated an excellent understanding by both students and teachers of what was required, and the capacity to deliver it.

Written examination

Section One: Short answer (32 Marks)

Candidates achieved a mean of 74.19% for this section. Of particular note was Question 1, in which candidates performed particularly well.

Section Two: Extended answer (36 Marks)

Candidates achieved a mean of 64.30% for Section Two. Question 6 posed the highest challenge to candidates in this section, while Question 5 was found to be most accessible.

Section Three: Wood (77 Marks)

This context achieved a mean of 64.51% for this section, which indicated an appropriate level of difficulty for candidates. The marks ranged from 47.92 to 18.70 out of 60 marks.

Section Three: Metal (77 Marks)

Metal achieved a mean of 62.47% for this section, which indicated an appropriate level of difficulty for candidates. This was the lowest mean of the three contexts. The marks ranged from 49.48 to 22.60 out of 60 marks.

Section Three: Textiles (77 Marks)

With an overall mean of 67.15%, Textiles candidates out performed the other two contexts in this section. The marks ranged from 53.77 to 23.77 out of 60 marks.