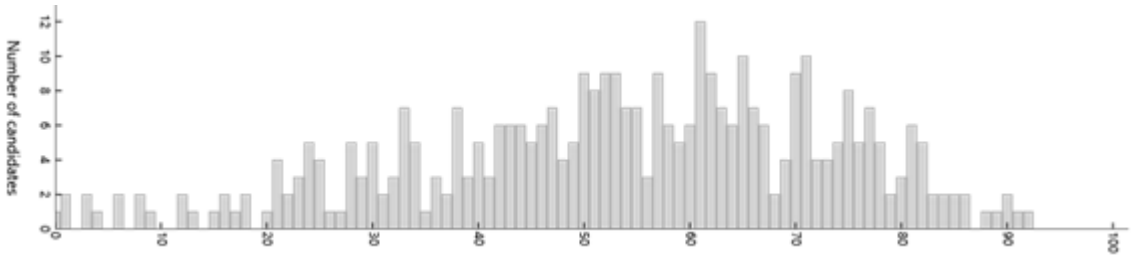
Summary report of the 2024 ATAR course examination report: Computer Science

Year	Number who sat	Number of absentees
2024	368	8
2023	433	5
2022	449	22
2021	420	13

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



Summary

The examination paper consisted of Section One: Short answer and Section Two: Extended answer. The overall mean was 53.16%. The syllabus was broadly examined and provided an opportunity for candidates to demonstrate their application of both knowledge and skills, although programming topics were more heavily weighted than others.

Attempted by 367 candidates	Mean 53.16%	Max 92.05%	Min 0.00%
Section means were:			
Section One: Short answer	Mean 57.24%		
Attempted by 367 candidates	Mean 22.90(/40)	Max 37.22	Min 0.00
Section Two: Extended answer	Mean 50.44%		
Attempted by 364 candidates	Mean 30.26(/60)	Max 54.83	Min 0.00

General comments

The examination was completed by most candidates. Several questions, particularly those related to networking and advanced concepts such as normalisation and data structures posed significant challenges. Despite this, there was evidence of strong performance in programming-focused questions.

Advice for candidates

- It is crucial to have a deep understanding of all content areas, including programming, networking, and databases to ensure you are well-prepared to demonstrate both conceptual understanding and practical application.
- Ensure you understand advanced programming concepts, such as creating and debugging algorithms, working with data structures, and implementing modular code. Practise writing and refining code to meet specific requirements.
- The working component requires greater depth, including understanding protocols, network configurations, and cybersecurity measures. Be prepared to answer both

theoretical and applied questions, such as creating network diagrams or troubleshooting configurations.
- Be ready to work with real-world scenarios, applying concepts like primary and foreign keys, referential integrity, and database optimisation.
- Pay close attention to the number of marks allocated to each question and the weighting of Part one and Part two. This indicates the level of detail and depth expected in your answer. Ensure all parts of multi-part questions are addressed.
- Many questions require more than just recall of facts, thus assessing your ability to analyse, evaluate, and apply knowledge to unfamiliar scenarios. Practise answering questions that test problem-solving and critical thinking skills.
- Ensure you allocate enough time to attempt all questions, particularly as the extended answer section has increased weighting. Regularly practise under timed conditions to improve your ability to complete the paper within the allocated time.
- Carefully read all questions to understand what is being asked, particularly questions involving multi-step problems or those with complex requirements.

Advice for teachers

- Ensure that students are given opportunities to engage with all aspects of the syllabus to the required depth. Every syllabus dot point must be taught comprehensively to prepare students for questions requiring in-depth knowledge and application.
- Provide regular practice in higher order thinking tasks, including analysing, evaluating, and applying knowledge to unfamiliar contexts. Students should also be familiar with solving complex problems in programming, networking, and database management to improve their confidence and accuracy.
- Focus on programming fundamentals and advanced concepts, such as modular programming, data structures, and the use of algorithms. Regular coding exercises that involve nested loops, functions, and debugging errors will strengthen student understanding and improve their problem-solving skills under examination conditions.
- Emphasise database concepts, including normalisation and the application of structured query language (SQL). Students should also be familiar with presenting tables in notational form as required by the syllabus and examination.
- Ensure students understand the range of verbs used in examination questions, such as list, describe, outline, explain, and justify, and practise writing responses that align with the mark allocation and marking key expectations. Use the Glossary of keywords on the course page to guide classroom activities and assessments.
- Include opportunities for students to apply their knowledge of networking concepts. This should include designing and interpreting network diagrams, understanding protocols, and discussing real-world cybersecurity scenarios.
- Encourage regular practice under timed conditions to improve students' ability to allocate time effectively between short answer and extended answer sections. Discuss the importance of addressing all parts of multi-part questions to maximise marks.
- Provide targeted feedback by discussing common mistakes observed in previous examinations. For example, highlight areas where conceptual misunderstandings occur, such as public and private keys in encryption, the purpose of normalisation, or the pros and cons of networking components.
- Promote the importance of clear presentation and logical sequencing in answers, especially for programming and database questions. Students should practice writing code, diagrams, and explanations in a structured and readable format.

Comments on specific sections and questions

Section One: Short answer

This section proved challenging with a mean of 57.24%. There were several questions that asked for in-depth answers in both knowledge and application of skills. Candidates performed well in questions requiring basic programming concepts, straightforward database tasks, and fundamental knowledge recall. Topics such as selecting appropriate data types, creating classes, and understanding basic database properties were handled well. Questions requiring deeper conceptual understanding, such as normalisation levels, advanced programming tasks (e.g. nested loops), and cybersecurity concepts like zero-day exploits, proved challenging for many candidates.

Section Two: Extended answer

Candidates demonstrated competence in questions that required logical programming processes and modular code design. Extended programming challenges were generally completed well, particularly where candidates applied appropriate logic and sequencing. However, questions requiring higher-order thinking, such as database normalisation, encryption methods, and detailed network analysis, proved challenging. Many candidates did not provide precise responses on topics such as router functionality, symmetric encryption, and Layer 3 switching.