



MATHEMATICS SPECIALIST

ATAR course

**Year 12 syllabus – What’s changing: Rationale and Aims
For teaching in 2027**

Acknowledgement of Country

Kaya. The School Curriculum and Standards Authority (the Authority) acknowledges that our offices are on Whadjuk Noongar boodjar and that we deliver our services on the country of many traditional custodians and language groups throughout Western Australia. The Authority acknowledges the traditional custodians throughout Western Australia and their continuing connection to land, waters and community. We offer our respect to Elders past and present.

Background

As part of the Western Australian Certificate of Education (WACE) Refreshment for reviewing the nomenclature of courses, the Authority has updated the rationale and aims of each syllabus.

The revised rationale and aims are aligned with the mapping of the general capabilities to provide clear connections between the rationale, aims and syllabus content. The rationale outlines what the subject is about and why it is important. It describes what students can expect to study in the course, along with the knowledge, skills and understandings they will develop throughout the course. It also explains how these can be applied in everyday life and references potential future pathways, outlining how students might connect what they learn in the course to further education, training and employment opportunities.

Important information

WACE Refreshment: Reviewing the nomenclature of courses

This document contains information that will be included in the syllabus effective from 1 January 2027.

Users of the syllabus are responsible for checking its currency.

Syllabuses are formally reviewed by the Authority on a cyclical basis, typically every five years.

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Rationale

The Mathematics Specialist ATAR course enhances mathematical knowledge and problem-solving skills through rigorous reasoning, proof techniques and abstract thinking. It is an advanced course that focuses on developing students' ability to tackle real-world challenges and provides essential tools for advancing in mathematically intensive fields.

The course focuses on further developing students' understanding of functions, vectors, complex numbers, and applying calculus techniques to solve problems in applied and theoretical contexts. The course expands students' use of statistical inference studied in the Mathematics Methods ATAR course to model a wide range of real-world situations.

By studying this course, students develop high-level mathematical reasoning and fluency in advanced problem-solving, and the ability to construct and communicate mathematical proofs. They refine their analytical skills by applying mathematical concepts to theoretical and real-world problems, enhancing their ability to evaluate solutions and justify their reasoning.

The mathematical skills and concepts covered have extensive real-world applications, particularly in science, engineering and technology. Students apply techniques from differentiation and integration to model and solve problems in biology, kinematics and other scientific areas, and employ mathematical reasoning in a variety of scenarios. Students apply statistical analysis and make data-driven decisions in situations that require critical thinking.

The Mathematics Specialist ATAR course provides a solid foundation for students who have a strong interest in mathematics and are intending to pursue further studies in fields that require advanced mathematical knowledge. It provides an essential foundation for university pathways in mathematics, engineering, computer science, physics, actuarial science, economics and other quantitative disciplines.

Aims

The Mathematics Specialist ATAR course aims to develop students’:

- understanding of concepts and techniques drawn from geometry, combinatorics, trigonometry, complex numbers, vectors, matrices, calculus and statistics
- ability to apply mathematical knowledge to solve applied and theoretical problems
- proficiency in reasoning and interpretation within mathematical and statistical contexts
- capacity to communicate findings clearly and systematically, using precise and appropriate mathematical and statistical language
- ability to construct proofs
- confidence to select and use digital tools appropriately and efficiently to support problem-solving and data analysis.