



COMPUTER SCIENCE

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 Computer Science ATAR course explores the development of software and the essential concepts of networking, data management and cybersecurity. In this course, students explore threats to networks and the overarching ethical considerations and security requirements that impact the development of digital solutions. They learn effective processes for data management, which are essential in the digital world, especially in the information-intensive business and scientific disciplines, and explore how cybersecurity is a major issue for society.

In the course, students explore the fundamentals of computer systems, programming and software development, focusing on problem-solving and computational thinking skills through the design, implementation and evaluation of computer-based solutions. Students learn to write code using structured programming languages, understand data representation, manage digital systems and investigate the ethical, legal and social impacts of technology. By engaging in real-world scenarios and projects, they gain experience in project management and the application of digital solutions to practical problems.

The course equips students with a range of technical, analytical and problem-solving skills that are valuable in both academic and professional settings. They use and enhance established analysis and algorithm design skills to create innovative digital solutions to real-world problems. Students develop computational, algorithmic and systems thinking skills which can be successfully applied to problems in areas outside information technology.

Students develop skills for everyday life, including using computational thinking to breakdown problems, recognising patterns and designing efficient algorithms. They develop data management skills, including collecting, organising and analysing information, while increasing their cybersecurity awareness to understand encryption, authentication and privacy principles. Students explore networks and systems, and understand hardware, software and cloud computing. They engage with emerging technologies, considering the ethical implications and innovative applications.

The Computer Science ATAR course provides students with a range of post-school pathways and has been designed to meet the expectations of tertiary institutions. Students will be well prepared for further study in university and vocational courses. By providing students with a sound understanding of computer science, they are supported to pursue further studies in science, technology, engineering, mathematics and business, and careers in software design, information systems and cybersecurity.

Aims

The Computer Science ATAR course aims to develop students’:

- skills in designing, maintaining, adapting and producing relational databases and digital solutions
- problem-solving skills using algorithms, data structures and programming languages
- ability to assess cybersecurity issues within a digital environment and apply appropriate responses
- understanding of the design, application and interactions of data and software in digital systems through the creation and maintenance of relational databases, network data transmission and programming constructs
- understanding of how to apply a technology process accurately to develop a digital solution
- understanding of the interrelationships between the development and use of digital solutions for individuals and societies in relation to the legal and ethical implications of software design, data management and cyber threats.