Government of **Western Australia**
School Curriculum and Standards Authority

COMPUTER SCIENCE

ATAR course

Year 12 syllabus – What's changing: General capabilities

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 to investigate the assessment and reporting of the general capabilities on the Western Australian Statement of Student Achievement (WASSA), the Authority has updated the statements about the general capabilities in each syllabus.

The Authority has mapped the general capabilities through the unit content and assessment types for each of the WACE courses. Students will have the opportunity to develop the general capabilities identified in the course through the teaching, learning and assessment programs. These general capabilities will be reflected on the WASSA.

Important information

WACE Refreshment: Investigating the assessment and reporting of the general capabilities on the Western Australian Statement of Student Achievement (WASSA)

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.

Representation of the general capabilities

The general capabilities encompass the knowledge, skills, behaviours and dispositions that will support students to live and work successfully now and into the future. Teachers should find opportunities to incorporate the following capabilities into the teaching and learning program for the Computer Science ATAR course. The general capabilities are not assessed unless they are identified within the specified unit content.

Critical and creative thinking

Students develop their critical and creative thinking skills to solve complex problems, design innovative solutions and evaluate computing systems, particularly the elements of inquiring, generating, analysing and reflecting. They build inquiry skills by identifying and defining computing problems, researching system requirements and investigating programming methodologies, such as exploring different algorithmic approaches and comparing the efficiency of various sorting and searching algorithms in projects and theory tests. Students develop creative solutions by designing algorithms, writing code and constructing digital systems. They engage in software development, where they write and refine code using structured programming, object-oriented principles and database integration. Students analyse and critically evaluate the effectiveness of computing solutions by testing, debugging and optimising algorithms. They examine real-world case studies, such as cybersecurity vulnerabilities or software performance issues, and apply critical thinking to improve system reliability and security.

Digital literacy

Students develop digital literacy skills, particularly in investigating, creating and exchanging, and managing and operating, by engaging students in real-world problem-solving using technology. Students research and evaluate computing systems, cybersecurity threats and emerging technologies, such as artificial intelligence and cloud computing. They analyse case studies on network security breaches, compare different encryption techniques and assess the ethical implications of data collection and algorithmic bias. Students create and exchange information to design, develop and test software solutions using programming languages such as Python and SQL. They build applications, develop relational databases, and implement networking protocols while learning to document and share their work through version control. Students manage and operate by troubleshooting hardware and software issues through programming languages. They learn about file management, system security and automation while applying cybersecurity measures like firewalls and access controls to protect digital assets.

Ethical understanding

Students foster their ethical understanding by challenging themselves to consider the ethical implications of computing technologies, cybersecurity and data management. They explore key ethical concepts, such as privacy, intellectual property, cybersecurity and responsible digital citizenship, and apply them to real-world scenarios. Students examine issues like data breaches, artificial intelligence bias and software piracy, evaluating different perspectives on how technology impacts individuals, businesses and society. They analyse case studies, debate ethical dilemmas and develop strategies to uphold ethical standards in computing. They also explore legal frameworks, such as the Australian Privacy Principles (APPs) and ethical responsibilities when designing and implementing software.

Literacy

Students develop literacy skills, particularly in reading, viewing and writing, throughout the course. They research and document system designs, write technical reports and create user manuals, requiring precise and structured communication. Students read and interpret programming syntax, algorithms and technical documentation, enhancing comprehension and analytical skills. They undertake coding exercises where they read and implement a set of specifications while documenting their work effectively. Students interpret complex problems, evaluate solutions and construct written responses explaining algorithms and system processes. By gaining literacy in the metalanguage of computer science, students understand that language varies according to context, and they increase their ability to use language flexibly.

Numeracy

Students develop numeracy skills, particularly in number sense and algebra, measurement and geometry, and statistics and probability, through problem-solving and algorithmic thinking. They apply number sense and algebra in programming through variables, expressions and complex algorithms that use arithmetic operations, logic and functions. Students work with coordinates, scaling and spatial representations, network topology and data structures. Statistics and probability are essential in data analysis, where students interpret datasets, apply statistical methods and use probability concepts in areas like machine learning, encryption and algorithm efficiency analysis.

Addressing the other general capabilities

Although the following general capabilities have not been identified as a focus in the Computer Science ATAR Year 12 syllabus, teachers may find opportunities to incorporate these capabilities into the teaching and learning program.

- Intercultural understanding
- Personal and social capability

Such opportunities may occur through the application of different contexts, pedagogical practices and/or assessment strategies that relate to the syllabus as part of the teaching and learning program.

Summary representation of the general capabilities in the Computer Science ATAR course

A representation of the general capabilities for the two years is summarised in the table below.

Year	Course	Course Type	General Capabilities						
			CCT	DL	EU	IU	L	N	PSC
Year 11	Computer Science ATAR (AECSC)	ATAR	✓	✓	✓		✓	✓	
Year 12	Computer Science ATAR (ATCSC)	ATAR	✓	✓	✓		✓	✓	

Key
CCT: Critical and creative thinking, DL: Digital literacy, EU: Ethical understanding, IU: Intercultural understanding, L: Literacy, N: Numeracy, PSC: Personal and social capability