



# **BIOLOGY**

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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 Biology ATAR course gives students insight into the fascinating diversity of life as it has evolved and as it interacts and functions. Investigation of biological systems and their interactions, from cellular processes to ecosystem dynamics, has led to knowledge and understanding that enable us to explore and explain everyday observations, find solutions to biological issues, and understand the processes of biological continuity and change over time. Biology helps us understand life processes, advances medicine, supports environmental conservation, improves agriculture and drives technological innovation. It plays a crucial role in addressing health, environmental and food security challenges.

Students study heredity, focusing on how offspring inherit traits from parents through cellular processes. They study genetic material transmission, inheritance patterns, and how predictive models help in decision-making. They also connect heredity to evolution, exploring gene pool diversity, selection pressures and speciation. They explore how organisms maintain stability in response to environmental changes like temperature, water and diseases. Students study homeostasis and how organisms adapt to survive within certain limits. They also examine the spread of infectious diseases and how to predict and control outbreaks. Students investigate how scientific models of environmental responses have evolved, and how science contributes to debates on sustainability and risk. They use inquiry skills to analyse plant and animal responses to environmental changes and develop reliable conclusions.

This course explores ways in which scientists work collaboratively and individually in a range of integrated fields. Students develop science inquiry skills by designing experiments, analysing data and drawing reliable conclusions. They develop their investigative, analytical and communication skills through field, laboratory and research investigations of living systems and through critical evaluation of the development, ethics, applications and influences of contemporary biological knowledge in a range of contexts.

Students gain skills and understandings that prepare them to understand, address and successfully manage environmental, health and sustainability challenges facing society in the twenty-first century. These include the biosecurity and resilience of ecosystems, the health and wellbeing of organisms and their populations, and the sustainability of biological resources. Students learn to use their understanding of the interconnectedness of biological systems when evaluating both the impact of human activity and the strategies proposed to address major biological challenges.

Studying the course provides students with skills and understandings that are valuable to a wide range of further study pathways and careers. Understanding of biological concepts, as well as general science knowledge and skills, is relevant to many fields, including agriculture, biotechnology, environmental rehabilitation, biosecurity, quarantine, conservation, ecotourism and medical, veterinary, food and marine sciences. The course also provides a foundation for students to critically consider and to make informed decisions about contemporary biological issues in their everyday lives.

## Aims

The Biology ATAR course aims to develop students’:

- understanding of how biological systems interact and are interrelated; the flow of matter and energy through and between these systems; and the processes by which they persist and change
- understanding of major biological concepts, theories and models related to biological systems at all scales, from subcellular processes to ecosystem dynamics
- appreciation of how biological knowledge has developed over time and continues to develop; how scientists use biology in a wide range of applications; and how biological knowledge influences society in local, regional and global contexts
- ability to plan and carry out fieldwork, laboratory and other research investigations, including the collection and analysis of qualitative and quantitative data and the interpretation of evidence
- ability to use sound, evidence-based arguments creatively and analytically when evaluating claims and applying biological knowledge
- ability to communicate biological understanding, findings, arguments and conclusions using appropriate representations, modes and genres.