



ASPIRE Robotics

Primary Campus Program Handbook

History and Rationale

The Varsity College Aspire Robotics Program was established to provide students with opportunities to extend their learning in Digital Technologies and Design Technologies through robotics, coding, engineering design and innovation. The program allows students to apply classroom learning in authentic contexts while developing problem-solving, collaboration and critical thinking skills.

Over time, participation in the program has continued to grow, creating opportunities for students to compete at regional, national and international levels. The success and growth of the program have also supported the development of a secondary school robotics pathway, enabling students to continue their robotics, coding and engineering learning throughout their years at Varsity College.

Goals and Purpose

The Aspire Robotics Program aims to develop future-focused learners who are capable problem-solvers, innovators and collaborative team members.

The program seeks to:

- Develop coding and computational thinking skills
- Build engineering design and problem-solving capabilities
- Foster creativity, innovation and critical thinking
- Promote teamwork, communication and leadership
- Develop resilience, perseverance and a growth mindset
- Provide opportunities for authentic robotics and engineering challenges
- Prepare students for future pathways in technologies and related industries.

Key Personnel

Mrs. Rhonda Mackie - rmack84@eq.edu.au
Varsity College Robotics Coordinator (Years 4–9)

Mrs. Mackie is the Varsity College Robotics Coordinator (Years 4–9) and a specialist Digital Technologies and Design Technologies teacher. She is passionate about helping students develop their skills in coding, computational thinking, engineering design, problem solving and innovation through authentic learning experiences.

Under Mrs. Mackie's leadership, Aspire Robotics students have qualified for the FIRST LEGO League National Championships on three occasions, represented Australia at the Asia Pacific Open Championships, and received the prestigious Coach's Award at international level. Students have also qualified for the VEX Australian National Championships on two occasions, demonstrating the continued growth and success of the program across multiple robotics platforms.

The growth of student participation and interest in robotics has contributed to the development of a secondary school robotics pathway, allowing students to continue building their knowledge and skills throughout their years at Varsity College.

Mrs Mackie is currently completing a Master of Education specialising in STEM, further developing her knowledge of effective teaching practices, emerging technologies and future-focused learning. She is committed to ongoing professional learning and creating engaging learning experiences that connect classroom learning with authentic challenges.

Mrs. Katrina Krygger - krkry0@eq.edu.au
Aspire Robotics Teacher

Mrs. Krygger brings extensive scientific knowledge and real-world experience to the Aspire Robotics Program. She holds a degree in Marine Biology and has worked in a range of scientific and operational leadership roles.

Mrs. Krygger previously managed the Penguin Breeding Program at Sea World, where she was responsible for breeding, conservation and animal management initiatives. She was also responsible for the operation of a QC3 Quarantine Facility, overseeing quarantine procedures, biosecurity requirements and animal welfare standards.

Her professional experience provides students with valuable insights into the practical application of science, research, data analysis and problem solving in real-world settings. Mrs. Krygger is passionate about supporting students as they develop skills in robotics, engineering design, coding and innovation while fostering curiosity, teamwork and perseverance.

Through her combined experience in science and education, Mrs. Krygger helps students understand the many pathways available within science, technology and related industries and encourages students to apply their learning to authentic challenges.

Program Overview

The Aspire Robotics Program provides students with opportunities to engage in advanced learning experiences in robotics, engineering design, coding and innovation. Students work collaboratively to design, build and program robots to solve authentic challenges using robotics platforms and engineering design processes.

Learning experiences are aligned with the Australian Curriculum Version 9.0, particularly the Technologies Learning Area, while also developing the General Capabilities of Critical and Creative Thinking, Digital Literacy, Personal and Social Capability, Ethical Understanding and Intercultural Understanding.

Students participate in engineering design challenges, coding projects, innovation tasks and robotics competitions. Through these experiences, students develop skills in problem solving, teamwork, communication and project management while applying knowledge across science, technology, engineering and mathematics disciplines.

The program also supports Cross-Curriculum Priorities where appropriate through authentic design challenges, innovation projects and community-focused problem solving.

Extra-Curricular Opportunities

Students may have opportunities to participate in:

- FIRST LEGO League (FLL)
- VEX Robotics Competitions
- Regional Robotics Competitions
- State Robotics Championships
- National Robotics Championships
- International Robotics Events
- University STEM and Technologies Experiences
- Industry Workshops and Guest Speakers
- Robotics Incursions

- Innovation Project Showcases
- Community STEM Events

Student Selection Criteria

Applicants are selected through a competitive application process. Selection may include:

- Online application
- Student interest statement
- Robotics and STEM aptitude assessment
- Coding and problem-solving tasks
- Practical robotics challenge
- Teacher recommendations
- Demonstrated commitment and enthusiasm

Maintenance of Position in Program

ASPIRE Programs operate a formal review process at the end of each term for students who consistently are not meeting Global ASPIRE Performance Areas as outlined in the Expectations and Commitment to Program Requirements. Grounds for review may include:

- Consistent lateness.
- Truancy, repeated detentions, after school detentions, suspension.
- Failure to submit assessment on a regular basis (monitoring and due dates).
- Failure to meet academic, behaviour and effort standards as outlined in the Expectations and Commitment to Program Requirements.
- Failure to meet the financial commitment of ASPIRE Program.

The ASPIRE Review Process for students consistently not meeting expectations is completed at the end of the term. The following procedures are then implemented:

- The students and their parents are contacted by either the ASPIRE Coordinator or the Head of Department where expectations of the program will be discussed. Specific targets will be identified and it is the student's responsibility to meet these.
- The student will be placed on probation for the following term. If students fail to meet their targets throughout this period, their enrolment in the program will be cancelled, and they will be placed in a mainstream class for the remainder of the year.

Application Process

The Varsity College ASPIRE Program applicants are required to:

- Complete the online ASPIRE Program Application which can be found on the Varsity College website.
- Upload all required documentation as required and submit by the closing date.
- Please note that incomplete applications will not be accepted.
- All applications must be received no later than the close date advertised on our platforms.
- You will receive further correspondence about testing dates and times once your application has been received and processed.

Upon completion of the application process, staff and specialist teachers will decide on the suitability of each applicant. Successful applicants will be notified by the school and the school's decision will be final.