

# TECHNOLOGIES: ROBOTICS

## ELECTIVE SUBJECT: Across four semesters

### WHY STUDY DESIGN?

*Technologies enrich and impact on the lives of people and societies globally. Technologies, in their development and use, are influenced by – and can play an important role in transforming, restoring and sustaining – our societies and our natural, managed, constructed and digital environments. The Technologies learning area draws together the distinct but related subjects of Design and Technologies and Digital Technologies. The Australian Curriculum:*

*Technologies will ensure that all students benefit from learning about and working with traditional, contemporary and emerging technologies that shape the world in which we live.*



### COURSE AIMS:

Technologies aims to develop the knowledge, understanding and skills to ensure that, individual and collaboratively, students:

- are creative, innovative and enterprising when using traditional, contemporary and emerging technologies, and understand how technologies have developed over time
- effectively and responsibly select and manipulate appropriate technologies, resources, materials, data, systems, tools, and equipment when designing and creating products, services, environments and digital solutions
- critique and evaluate technologies processes to identify and create solutions to a range of problems or opportunities
- investigate, design, plan, manage, create, produce and evaluate technologies solutions
- engage confidently with technologies and make informed, ethical and sustainable decisions about technologies for preferred futures including personal health and wellbeing, recreation, everyday life, the world of work and enterprise, and the environment.



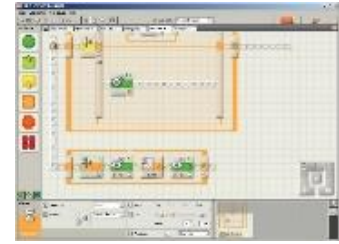
### COURSE ORGANIZATION:

The study of Technologies in Robotics can be studied across 4 semesters. The level of work and understanding increases as students move through the Robotic units. Students build on previous knowledge to complete more complex programming and construction scenarios.

## Semester 1 TR551 - Foundation



Through the use of online tutorials, guided instruction and problem solving, students will build robots to suit particular challenges using EV3 Lego. They will then program the robot using drag and drop to complete the challenges. Students will learn problem solving skills and patience through trial and error to achieve the desired outcome. A variety of tasks will be given over the semester.



### Assessment

Assessment will be completed in class. Students will complete a variety of tasks with a focus on one major challenge per unit involving a detailed design write up.

## Semester 2 TR552 – Foundation 2



Through the use of online tutorials, guided instruction and problem solving, students will build robots to suit particular challenges using the new EV3 Lego kits. They will then program the robot using drag and drop to complete the challenges. The challenges will become more in-depth and will involve more sensors in combination as well as motors that allow the robots to pick up and place objects.



### Assessment

Assessment will be completed in class. Students will complete a variety of tasks with a focus on one major challenge per unit involving a detailed design write up.