The Seaton High School UAV Specialist Program explores UAV applications across multiple South Australian Certificate of Education (SACE) subjects as an Integrated Program. This provides the opportunity for students to tackle real world problems with the use of emerging technologies in precision agriculture and the management of invasive plant and animal species. The UAV Specialist program gives students the opportunity to become certified drone pilots and gain industry qualifications (RePL and AROC) and experience in collaboration with The University of Adelaide’s Centre of Applied Conservation Science and Unmanned Research Aircraft Facility. The program empowers students with the skills and qualifications for a wide range of tertiary pathways for jobs of the future in areas such as Aerospace, Engineering, Conservation and Earth Sciences.

**Industry Demand & Qualifications**

- Remote Pilots Licence (RePL)
- Aeronautical Radio Operators Certificate (AROC)

**Stage 2 Control Technology**

- 20 credits
- Skills & Applications Tasks
- Minor Product
- Major Product

Control Technology allows students to engage in a range of specialised skills tasks encompassing Computed Aided Design (CAD) virtual wind tunnel analysis. For their major product students engage in the engineering design cycle to design, prototype and produce a specialized herbicide deployment mechanism that can be attached to a RPAS to apply metered doses of herbicide to Weeds of National Significance. Students generate georeferenced orthomosaics to plan and execute autonomous missions to deploy herbicide.

**Stage 1 Scientific Studies**

- 10 credits
- Skills & Applications Tasks
- Practical Application
- Issues Investigation

Scientific Studies engages students with the scientific method to plan and conduct experimental investigations. Students undertake issues analyses surrounding the contexts of precision agriculture (crop monitoring) and invasive species control (African Boxthorn). Students work collaboratively using mission planning and image analysis software to provide evaluations of crop health and recommendations for land owners. They consider political, social, economic, cultural, and environmental issues relating to the use of UAVs.

**Stage 1 Geography**

- 10 credits
- Geographical Skills & Applications Tasks
- Field Studies

Through a collaboration with Natural Resources Kangaroo Island (NRKI), the students undertake a proof of concept trial using UAVs, RGB and multispectral imagery to develop a cost effective and safe method to identify, map, monitor and control Weeds of National Significance (WoNS), specifically African Boxthorn, infestations on Kangaroo Island. This proof of concept trial aims to contribute to the development of an industry standard for mapping and controlling African Boxthorn as well as provide students with experience in a real-world application of UAVs.

**With the drone industry anticipated to be worth $127 billion by 2020 there are dynamic employment opportunities for young, skilled professionals in this emerging field**. The program brings together industry and research science that engages students in imperative skills for jobs of the future such as coding, GIS and big data analysis, robotics, Computer Aided Design (CAD) and advanced manufacturing. Students graduate from the program with a RePL, AROC and industry experience. This equips them with the skills to be successful in the diverse industry.

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**A SACE package with INDUSTRY QUALIFICATIONS FOR JOBS OF THE FUTURE**