

# Defence Industry Guide for Teachers



## What is the Defence Industry?

Defence Industry is different from the Australian Defence Force (ADF).

It refers to businesses and companies that provide products, services, and technologies to support the Australian Defence Force (ADF). These businesses help with national security and other important tasks, not just in times of war.



## The AVISTA Program

The AVISTA program is providing direct insights into Defence Industry career pathways to students, parents and teachers across Australia. In addition to the show that is visiting your school, there are a range of resources available to help further students' understanding of STEM Careers and Defence Industry pathways.

### AVISTA Challenge

The AVISTA Challenge will place students in the shoes of Defence Industry professionals to solve problems for their share of prizes.

The AVISTA Challenge launches in May 2025.

### VR Simulation

Compete to complete a test flight and aircraft maintenance test in VR, using VR Headsets or on a phone or computer.

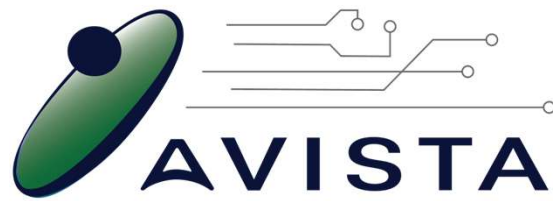
The VR Simulator will be available from May 2025.

### Career Hub

Meet industry professionals and learn more about career pathways in the defence.

Coming to Cairns, Perth and Newcastle in Term 3.

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## Defence Industry Skills in Demand

**Engineering** – Involves systems, mechanical, civil, and electrical engineering for design, construction, and maintenance. Both vocational and degree-qualified engineers are in demand.

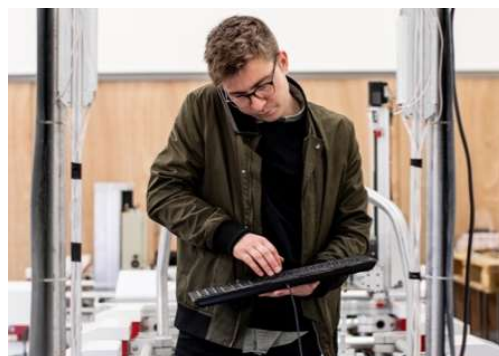
**Design** – Encompasses computer-aided design (CAD), systems, interface, and software design, working closely with engineers to manage project risks. Some roles combine engineering and design.

**Manufacturing** – Covers fabrication, welding, production design, and boiler making, producing military platforms, systems, equipment, vehicles and spare parts.

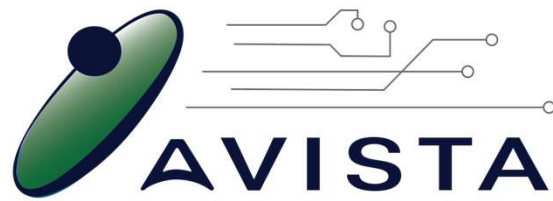
**Program Management** – Focuses on planning and coordination, including project management, contracting, scheduling, and cost estimation.

**Logistics** – Supports ADF operations by managing transport, supply chains, and maintenance of military assets.

**Support Services** – Includes long-term system maintenance, training, simulation, and ICT support, ensuring operational readiness.



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## STEM in the Defence Industry

In the Defence Industry, there is a strong focus on **STEM (Science, Technology, Engineering, and Mathematics)**. Some of the key areas needed include:

- **Science** – Especially for areas like materials science (making better, stronger equipment) and physics (working on things like fuel sources or navigation systems)
- **Technology & IT** – To create software, manage cybersecurity systems, and develop new technology like robotics or artificial intelligence.
- **Engineering** – To design and build military equipment, vehicles, and technology.
- **Mathematics** – For solving complex engineering problems, analysing data, and improving designs.



## STEM Skills

As well as the specific STEM disciplines mentioned above, general STEM literacy and higher order STEM skills are also essential in the Defence Industry. For example:

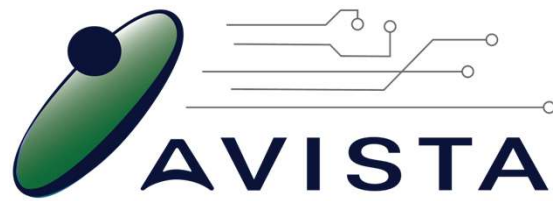
- Problem solving
- Critical thinking
- Creativity and innovation
- Entrepreneurship
- Digital skills



## Defence Industry Domains

- **Air** – Design, manufacturing and maintenance of aircraft and drones.
- **Information & Cyber Security**– Protects defence networks, strengthens cybersecurity, and safeguards critical systems.
- **Land** – Produces and supports military vehicles, robotics, transportation and logistics technology.
- **Maritime** – Builds and maintains naval vessels, including submarines.
- **Space** – Supports satellite communications, space surveillance, and air traffic systems for defence operations.

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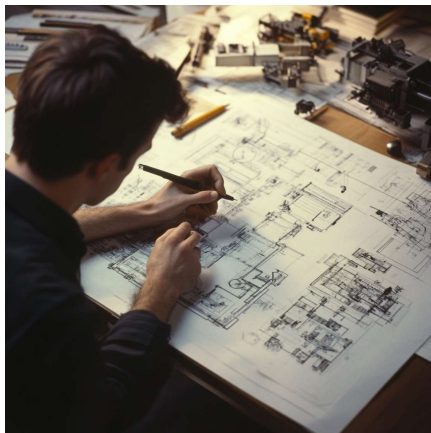
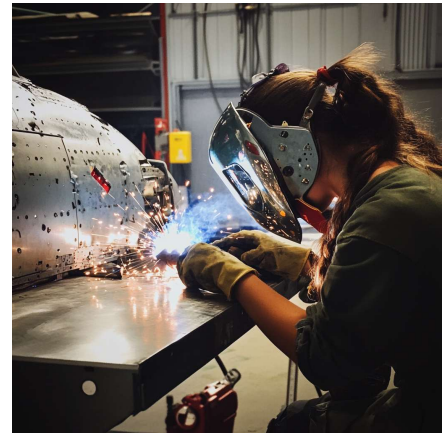
## Defence Industry Occupations and Pathways

Given the range of in-demand roles within Defence Industry, there are many pathways to a successful career, including trade and higher education pathways. There are a wide range of qualifications and occupations that could lead to exciting opportunities in the Defence Industry.

**Welder:** fabricates and repairs machinery and equipment including naval ships and armoured vehicles.

Related courses:

- Certificate II in Engineering (Heavy fabrication pre-apprenticeship)
- Certificate III in Engineering- fabrication trade (heavy) (Apprenticeship)
- Certificate IV in Engineering (welding)



**Industrial Designer:** develops and prepares products for manufacture. This can include personal protective equipment, transportation solutions, wearable technology, communication systems and more.

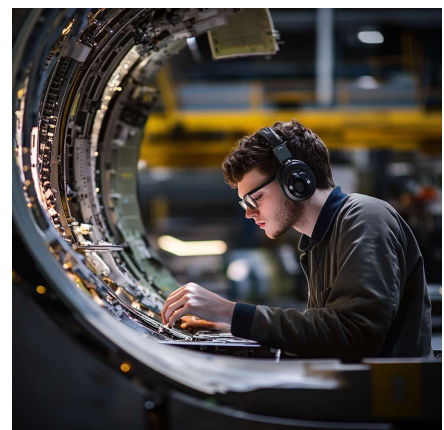
Related courses:

- Certificate IV in Design (Product Design)
- Diploma of Product Design
- Bachelor of Design (Industrial Design)

**Systems Engineer:** designs, integrates, and manages complex systems to ensure they function efficiently and meet requirements. They analyse needs, design systems, test functionality, manage risks, and provide support throughout the systems' lifecycle.

Related courses:

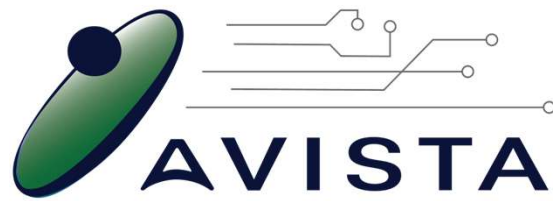
- Certificate IV in Cyber Security
- Advanced Diploma of Cyber Security
- Bachelor of Computer Science/IT/Electronic engineering (or other related field)



# AROSE



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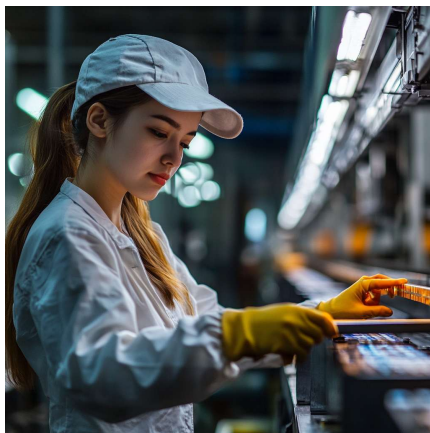
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**Robotics and Automation Engineer:** design, build, implement and maintain robots and automated systems.

Related courses:

- Certificate IV in Integrated Technologies (Robotics Control Systems)
- Diploma of Engineering Technology (Mechatronic Engineering)
- Bachelor of Engineering (Mechatronics)



**Procurement Manager:** oversees acquisition of materials, services and equipment to supply Defence Industry agencies. Ensures the ADF has required goods, services and equipment to support operations.

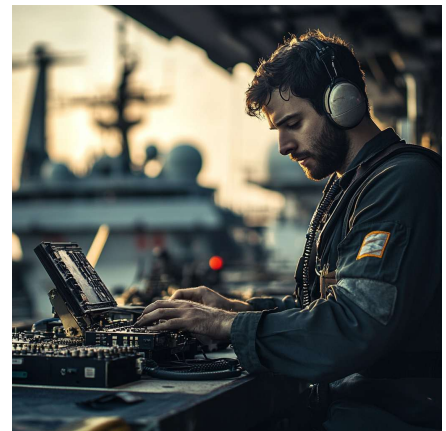
Related courses:

- Diploma of Business
- Diploma of Logistics
- Bachelor of Business/Logistics Management

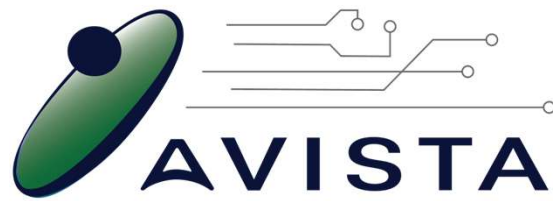
**Electronics Technician:** design electronic components, and repair, install, service, and update existing electronic systems.

Related courses:

- Certificate III in Defence Industry Pathways
- Certificate II in Electronics (pre apprenticeship)
- Certificate III in Electronics and Communications (Apprenticeship)
- Certificate IV in Electronics and Communications



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## Where can I find more information?

Forge Your Future uses AI-driven behavioural science-based tools to provide students with deep insight to discover their natural strengths, engage with opportunities to gain industry experience and certifications, and connect with their future employers.

<https://www.forgeyourfuture.com.au>

Learn more about career opportunities in Australia's Defence Industry

<https://www.defenceindustry.gov.au>

Learn more about Western Australia's Defence Industry

<https://theotherforce.wa.gov.au/careers-and-training/occupations>

Learn more about South Australia's Defence Industry

<https://findyourplacesa.com>

Discover more STEM Careers in the Careers with STEM: Defence magazine

<https://issuu.com/refractionmedia/stacks/3b631ff1909045b39ffe96f371e0ac4a>



## What is AVISTA?

AVISTA is an initiative of AROSE, delivered in partnership with Fizzics Education, Gilmour Space Technologies, Gunggandji Aerospace, Illuminate FNQ, Joseph Banks Secondary College, Nova Systems and University of Western Australia Defence and Security Institute.

Supported by the Department of Defence School Pathways Program, AVISTA will deliver a range of exciting learning experiences to students, their teachers and families throughout 2025, to help develop Australia's STEM talent pipeline by providing direct insights into Defence Industry career pathways.