# Mechanical and Mechatronic Engineering

## What is Mechanical and Mechatronic Engineering in a rail environment?

Mechanical and Mechatronic engineering in a rail environment features in development, construction and maintenance including:

- **Rolling Stock** – passenger and freight
- **Maintenance** – equipment and management
- **Mechanical Services** – airconditioning, ventilation, pollution control, security systems, wash plants etc.

Mechanical and Mechatronic Engineers are involved in all facets of the life cycle of railway asset management.

## What is the purpose of Mechanical and Mechatronic Engineering?

Mechanical and Mechatronic Engineers in a rail environment are involved in:

- **Standards** – to establish and manage standards for rolling stock including the issuing of waivers and permission to operate rolling stock on the NSW Government System.
- **Consultative Engineering** – to conduct research and provide advice on rolling stock issues, develop documentation on and deliver rolling stock and mechanical projects.

These include:

- new train procurement;
- upgrade and refurbishment of trains;
- investigation of technical issues such as crashworthiness and train performance improvement;
- purchasing, installation and commission of new equipment;
- underfloor wheel machining;
- train progression systems; and
- track maintenance machinery and upgrade of facilities, such as buildings, drainage, trackwork, and maintenance facilities etc.

## What are the career paths for Mechanical and Mechatronic Engineers?

Working as a mechanical or Mechatronic engineer offers a huge variety of tasks including:

- research and investigation of technical issues
- design and review of equipment, rolling stock and facilities
- development of technical documentation for tendering
- development of technical systems for measurement of rolling stock performances
- management of the supply, delivery and commission of works

These tasks lead to career opportunities in:

- Rolling Stock Standards
- Rolling Stock Consultative Engineering
- Plant and Equipment

Other groups such as:

- Track Recording
- Infrastructure Maintenance
- Asset Management

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## What kind of Mechanical or Mechatronic Engineer is suited to working in a rail environment?

Mechanical and Mechatronic Engineers who have good communication skills, the ability to work in a team and an interest in learning and being challenged enjoy working in the rail industry.

You need to:

- be ready to take on new tasks and research options and solutions
- enjoy problem solving and seeking advice from a variety of stakeholders
- like working in a diverse multi-discipline environment where each day presents new and different challenges
- be willing to perform tasks and deliver to the agreed program of work

## What subjects should a Mechanical or Mechatronic Engineer study at university to have a career in rail?

Mechanical and Mechatronic Engineers should have a sound knowledge of mechanical engineering principles, and in particular have studied mechanics, fluids, thermodynamics, design, industrial engineering, and electrical principles. Specialist railway skills are built on basic engineering principles and through in-house training courses and guidance from experienced staff.

For further information about RailCorp please visit **www.railcorp.nsw.gov.au**

To apply for further information about the Graduate Program, please contact: graduate@railcorp.nsw.gov.au

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