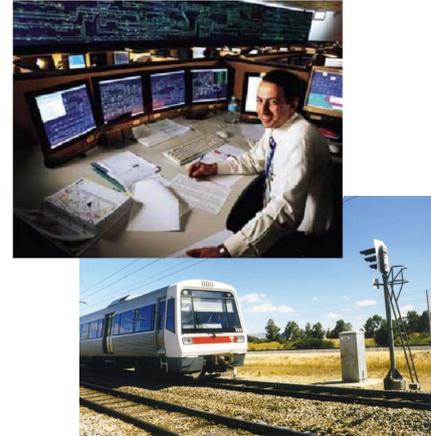


10780NAT Graduate Diploma of Railway Signalling



Nationally Recognised Training for Signalling Engineers and Technologists

If you are a graduate starting out a career in railway signalling or have experience in railway signalling and wish to upgrade your formal qualifications then the 10780NAT Graduate Diploma of Railway Signalling course can assist you to achieve your goals.

The nationally recognised Graduate Diploma of Railway Signalling provides the underpinning knowledge and skills required for railway signal engineers, preparing learners to undertake a broad variety of tasks and projects in the area of signalling. The graduate diploma has a focus on the technology and management of the safety related aspects of signalling and train control projects and systems.

The course is appropriate for individuals working in the fields of signalling design, signalling maintenance, signalling construction, control systems and project engineering within the railway environment.

The course material has been developed under the sponsorship of the Cooperative Research Centre for Railway Engineering and Technologies (Rail CRC) by experienced railway signal engineers and practitioners who are members of the Institution of Railway Signal Engineers (IRSE) Australasian Section. The content of the course is aligned with a respective set of competencies required for IRSE corporate membership.

The course includes the following units:

- RSTSSR001 Develop concept signalling and safety management systems for the safe operation of railways
- RSTSPR002 Apply railway signal engineering principles to the design of signalling systems
- RSTSLA003 Develop the signalling layout
- RSTSAP004 Determine subsystem and application requirements for the signalling system
- RSTSME005 Manage the engineering requirements for a signalling system
- RSTRIP006 Conduct a research project involving complex issues in railway signalling

After successful completion of the six units learners are awarded 10780NAT **Graduate Diploma of Railway Signalling**.

Who Should Undertake the Graduate Diploma of Railway Signalling?

- The course is designed for:
 - Engineers who wish to develop their knowledge, skills and careers in railway signalling
 - Graduates with a bachelor degree in Electrical Engineering or related discipline who have more than six months of work experience in the railway industry

- Rail technicians who have extensive experience in the areas of rail signalling
- Engineers who would like to improve their understanding in a particular subject may undertake a selected Unit as a single non-award course.

Benefits Provided

The course provides the following benefits:

- A Nationally Recognised qualification in railway signalling
- The opportunity for graduates to fast track their careers by providing them a thorough and comprehensive understanding of all major areas of railway signalling and the competencies to apply this knowledge to a wide range of practical situations
- Development and improvement of general professional and communication skills
- Professional network building achieved through collaboration and team projects working closely with other rail professionals from different rail organisations
- Mentoring and assistance by unit tutors (senior railway signal engineers and practitioners) over the duration of the training.
- Links and access to generic and rail-specific online materials and IRSE technical papers.

Entry Requirements

Applicants for the Graduate Diploma of Railway Signalling must have completed a Bachelor of Engineering or Science in electrical, computer science, or related discipline. The relevant degree must have included a component of cost engineering or equivalent competency, or evidence provided that equivalent competency has been gained, and the applicant must be currently employed in the railway signalling industry.

If the applicants do not hold an applicable Bachelor degree they must have at least five years' experience in undertaking signalling trade work and associated cost engineering activities and have a letter of support from their employer and be currently employed in the railway signalling industry.

Applications for single non award courses need to meet the pre-requisites for the particular course.

Delivery

The course is delivered via flexible online learning and is particularly suitable for engineers and other professionals working full-time and undertaking the study at a time of convenience. Students are supported by course tutors.

When

The course commences every January.

The six units are completed over a minimum two year period.

Mid-year intakes may also become available, dependent on demand.

For Enrolment and Further Information

For enrolment and further information, please contact Competency Australia.

Website : <https://CompetencyAustralia.edu.au>

Phone : +612 4040 9110

Email : info@CompetencyAustralia.com.au

For general information regarding the course contact the IRSE Australian Section email secretary@irse.org.au

Course Outline

Graduate Diploma in Railway Signalling

RSTSSR001 Develop concept signalling and safety management systems for the safe operation of railways

This unit covers the performance outcomes, skills and knowledge required to:

- develop concept railway signalling system plans
- develop outline safety plans for railway signalling systems
- apply techniques for hazard identification, risk assessment and mitigation
- define the processes for ensuring safety in the specification, design (data preparation, circuit design etc), verification and testing and commissioning (validation) of signalling systems.

These are essential elements in developing a project proposal for approval. They form the foundation for the designs and plans used for implementation.

The unit requires broad, systematic and multidisciplinary knowledge and skills related to the role of signalling in safe railway operation. It requires a broad knowledge of signalling principles and equipment.

This unit develops the broad concepts for a number of skills which are further developed in later units.

It requires the ability to demonstrate a professional understanding of the integration of the equipment and subsystems used to form the complete signalling system.

RSTSPR002 Apply railway signal engineering principles to the design of signalling systems

This unit covers the performance outcomes, skills and knowledge required to apply first principles to the design of signalling systems, including analysing operational requirements and relevant local signalling practices so that the delivered system is safe, fit for purpose and cost-effective. The requirements development process includes a critical analysis and evaluation of rail safety legislation, codes of practice, and industry standards and guidelines for inclusion in the design.

The unit requires the ability to interpret and create signalling documentation, including interlocking and control tables for given network layouts and operational requirements.

RSTSLA003 Develop the signalling layout

This unit covers the performance outcomes, skills and knowledge required to develop a signalling layout for a variety of different traffic patterns and equipment systems in a professional and cost-effective manner, taking into account the constraints of the layout and safety requirements.

It requires the ability to demonstrate a professional understanding of the integration of the equipment and subsystems used to form the complete signalling system. It also requires the ability to integrate requirements and constraints from multiple railway disciplines into a safe, efficient and cost-effective design.

RSTSAP004 Determine subsystem and application requirements for the signalling system

This unit covers the performance outcomes, skills and knowledge required to engineer signalling applications at the individual unit, or subsystem level in a safe manner.

It requires the ability to demonstrate a professional understanding of the factors to be considered when applying signalling and communications equipment at all stages in the lifecycle from specification to operation. It requires the ability to demonstrate a professional understanding of the integration of the equipment and subsystems used to form the complete signalling system.

This unit builds on previous units to give the depth of knowledge and skills required to ensure the safe and effective operation of signalling equipment during all phases of the life cycle.

RSTSME005 Manage the engineering requirements for a signalling system

This unit covers the performance outcomes, skills and knowledge required to manage the engineering and safety requirements of the railway signalling and control system using a systems engineering perspective.

It requires the ability to understand and apply safety assurance and reliability, availability, maintainability and safety (RAMS) techniques and to provide for the integration of many subsystems and diverse equipment in a professional manner.

It requires the ability to demonstrate a professional understanding of the integration of the equipment and subsystems used to form the complete signalling system.

This unit builds on previous units to give the depth of knowledge and skills required to ensure the safe and effective operation of signalling systems during all phases of the life cycle.

RSTRIP006 Conduct a research project involving complex issues in railway signalling

This unit covers the performance outcomes, skills and knowledge required to undertake an individual research project concerning a railway signalling industry innovation/issue requiring investigation, analysis, and argument (rationale) to arrive at recommendations and conclusions.

This unit requires the ability to demonstrate a professional understanding of the integration of the equipment and subsystems used to form the complete signalling system, identifying issues in the system and providing safe and practical recommendations.

This unit builds on the skills and knowledge gained in developing concept signalling system plans; applying railway signal engineering principles; developing signalling layouts; determining components and application requirements for signalling subsystems; and managing the engineering requirements for a signalling system