



Australian Government

RII40820 Certificate IV in Civil Construction Design

Release: 2

RII40820 Certificate IV in Civil Construction Design

Modification History

Release	Comments
Release 2	This version was released with RII Resources and Infrastructure Training Package version 7.0. Version created to fix typographical and/or unit grid errors.
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Qualification Description

This qualification reflects the role of individuals who provide design support for professional engineers. They perform tasks involving a broad range of work activities, most of which are specialised and within known or changing contexts and could include civil works drafting. In their area of responsibility, they apply design work instructions and practices to ensure the quantity and quality of their own work and the output of others. They contribute to the development of technical solutions to non-routine problems.

Licensing, legislative, regulatory or certification considerations

Licensing, legislative and certification requirements that apply to this qualification can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the qualification.

Entry Requirements

Nil

Packaging Rules

The following provides the packaging rules for this qualification, followed by the list of relevant units of competency.

Total number of units = 12

12 elective units, of which:

- at least two (2) must be chosen from Group A
- at least two (2) must be chosen from Group B
- at least two (2) must be chosen from Group C
- at least two (2) must be chosen from Group D

- the remaining elective units may be chosen from any elective group in this qualification, or alternatively up to two (2) may be chosen from elsewhere in this training package or from another endorsed training package or accredited course.

All elective units selected from outside this qualification must reflect current occupational and learning outcomes of this AQF qualification level.

There are prerequisites to imported units listed in this qualification. Where a unit is imported all prerequisites specified must be complied with and the combined choice of imported elective units and/or their prerequisites must not compromise the AQF alignment of this qualification. Refer to RII Companion Volume Implementation Guide Pathways Section for further guidance.

<i>Unit code</i>	<i>Unit title</i>
Group A	
BSBINS402	Coordinate workplace information systems
BSBLDR413	Lead effective workplace relationships
BSBLDR411	Demonstrate leadership in the workplace
BSBPEF402	Develop personal work priorities
BSBSTR401	Promote innovation in team environments
BSBSTR402	Implement continuous improvement
Group B	
MEM30031A	Operate computer-aided design (CAD) system to produce basic drawing elements
MEM30032A	Produce basic engineering drawings
MEM30033A*	Use computer-aided design (CAD) to create and display 3-D models
Group C	
RIICWD501E	Prepare detailed design of foundations
RIICWD502E	Prepare detailed design of lighting
RIICWD504E	Prepare detailed design of environmental controls
RIICWD505E	Prepare detailed design of landscaping
RIICWD506E	Prepare detailed design of canals
RIICWD507D	Prepare detailed geotechnical design
RIICWD508E	Prepare detailed design of rural roads
RIICWD511E	Prepare detailed design of sub-divisions
RIICWD513E	Prepare detailed design of rail civil infrastructure

<i>Unit code</i>	<i>Unit title</i>
RIICWD514E	Prepare detailed design of dams
RIICWD515E	Prepare detailed design of airfield civil works
RIICWD516E	Prepare detailed design of bicycle ways
RIICWD517E	Prepare detailed design of industrial hardstands
RIICWD518E	Prepare detailed design of open car parks
RIICWD519E	Prepare detailed design of intermodal facilities civil works
RIICWD521E	Prepare detailed design of flexible pavements
RIICWD522E	Prepare stabilised material mix design
RIICWD523E	Prepare asphalt mix design
RIICWD524E	Prepare design of spray seal surfacing
RIICWD525E	Select pavement surfacing
RIICWD527E	Prepare detailed design of traffic signals
RIICWD529E	Prepare detailed design of underground services
RIICWD530E	Prepare detailed design of surface drainage
RIICWD531E	Prepare detailed design of subsurface drainage
RIICWD537E	Prepare detailed design of marine structures civil works
Group D	
CPPSIS3015	Collect basic surveying data
CPPSIS5032	Capture new spatial data
CPPSIS5035	Obtain and validate spatial data
CPPSIS5036	Integrate spatial datasets
MEM23004A	Apply technical mathematics
MEM23007A*	Apply calculus to engineering tasks
MEM30005A*	Calculate force systems within simple beam structures
MEM30006A*	Calculate stresses in simple structures
MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment
MSL924003	Process and interpret data
MSL954004	Obtain representative samples in accordance with sampling plan
MSL973021	Conduct field-based acceptance tests for construction materials
MSL973022	Conduct laboratory-based acceptance tests for construction materials

<i>Unit code</i>	<i>Unit title</i>
MSL974016	Perform physical and mechanical tests
MSL974019	Perform chemical tests and procedures
MSL974026*	Perform tests to determine the properties of construction materials
MSL975031*	Supervise sampling, inspections and testing at construction sites
MSL975044*	Perform complex tests to measure engineering properties of materials
RIICBS401E	Supervise asphalt paving and compaction operations
RIICBS402E	Supervise the application of bituminous sprayed treatments
RIICBS403E	Supervise the application of polymer modified binders
RIICBS404E	Supervise the selection and use of bituminous emulsions
RIICBS405E	Supervise micro surfacing operations
RIICBS406E	Supervise pavement profiling operations using a profiler
RIICBS407E	Supervise the manufacture and delivery of hot mix asphalt
RIICBS408E	Supervise the manufacture of cold mixes
RIICBS409E	Supervise the manufacture of polymer modified binders
RIICBS410E	Supervise the manufacture of bituminous emulsions
RIICBS411E	Supervise the manufacture of micro surfacing mixes
RIICPL401E	Supervise the installation of underground services using open excavation
RIICRC401E	Supervise flexible pavement construction
RIICRC402E	Supervise rigid pavement construction
RIICRC403E	Supervise the stabilisation of materials
RIICRC404E	Inspect and report on pavement condition
RIICRC405E	Carry out pavement condition measurement
RIICSG401E	Supervise civil concrete structure construction
RIICSG402E	Supervise civil steel structure construction
RIICSG403E	Supervise civil timber structure construction
RIICSG404E	Supervise civil masonry, crib and gabion structure construction
RIICTC401E	Supervise tunnel construction
RIICTT401E	Supervise the installation of underground services using trenchless technology
RIICTT402E	Supervise repair and rehabilitation of underground services using trenchless technology
RIILAT402E	Provide leadership in the supervision of diverse work teams
RIIMEX403E	Supervise canal construction

<i>Unit code</i>	<i>Unit title</i>
RIIMPO402D	Apply the principles of earthworks construction
RIISTD202E	Collect routine site samples

*Note the following prerequisite unit requirements.

UNIT IN THIS QUALIFICATION	PREREQUISITE UNITS
MEM23007A Apply calculus to engineering tasks	<ul style="list-style-type: none"> MEM23004A Apply technical mathematics
MEM30005A Calculate force systems within simple beam structures	<ul style="list-style-type: none"> MEM30012A Apply mathematical techniques in a manufacturing engineering or related environment
MEM30006A Calculate stresses in simple structures	<ul style="list-style-type: none"> MEM30012A Apply mathematical techniques in a manufacturing engineering or related environment
MEM30033A Use computer-aided design (CAD) to create and display 3-D models	<ul style="list-style-type: none"> MEM30031A Operate computer-aided design (CAD) system to produce basic drawing elements
MSL974026 Perform tests to determine the properties of construction materials	<ul style="list-style-type: none"> MSL973022 Conduct laboratory-based acceptance tests for construction materials
MSL975031 Supervise sampling, inspections and testing at construction sites	<ul style="list-style-type: none"> MSL954004 Obtain representative samples in accordance with sampling plan MSL973021 Conduct field-based acceptance tests for construction materials
MSL975044 Perform complex tests to measure engineering properties of materials	<ul style="list-style-type: none"> MSL973022 Conduct laboratory-based acceptance tests for construction materials MSL974026 Perform tests to determine the properties of construction materials

Qualification Mapping Information

Supersedes and is equivalent to RII40815 Certificate IV in Civil Construction Design.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>