



Australian Government

RII50520 Diploma of Civil Construction Design

Release: 1

RII50520 Diploma of Civil Construction Design

Modification History

Release	Comments
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 working as designers or design paraprofessionals who support professional engineers. They perform tasks involving a high level of autonomy and requiring the application of significant judgement in planning and determining the selection of equipment/roles/techniques for themselves and others. They are required to develop site specific work designs to ensure the implementation of the client's site requirements. They demonstrate the application of a broad range of technical, managerial, coordination and planning skills.

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

Total number of units = 20

20 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 four (4) must be chosen from Group C
- at least four (4) must be chosen from Group D
- no more than three (3) units may be chosen from elsewhere within this training package, or from another endorsed training package, or from an 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 with guidelines for unit selection of prerequisites outlined at the end of this section. 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	
BSBINS501	Implement information and knowledge management systems
BSBOPS505	Manage organisational customer service
BSBPEF501	Manage personal and professional development
BSBPMG531	Manage project time
BSBPMG532	Manage project quality
BSBPMG536	Manage project risk
BSBPMG537	Manage project procurement
BSBSTR601	Manage innovation and continuous improvement
BSBTWK502	Manage team effectiveness
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
RIICWD509E	Prepare detailed design of urban roads

<i>Unit code</i>	<i>Unit title</i>
RIICWD510E	Prepare detailed design of busways
RIICWD511E	Prepare detailed design of sub-divisions
RIICWD512E	Prepare detailed design of motorways and interchanges
RIICWD513E	Prepare detailed design of rail civil infrastructure
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 inter modal facilities civil works
RIICWD520E	Prepare detailed design of rigid pavements
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
RIICWD526E	Prepare detailed traffic analysis
RIICWD527E	Prepare detailed design of traffic signals
RIICWD528E	Prepare detailed design of traffic management systems
RIICWD529E	Prepare detailed design of underground services
RIICWD530E	Prepare detailed design of surface drainage
RIICWD531E	Prepare detailed design of subsurface drainage
RIICWD532E	Prepare detailed design of tunnels
RIICWD533E	Prepare detailed design of civil concrete structures
RIICWD534E	Prepare detailed design of civil steel structures
RIICWD535E	Prepare detailed design of civil timber structures
RIICWD536E	Prepare detailed design of civil masonry, crib and gabion structures
RIICWD537E	Prepare detailed design of marine structures civil works
Group D	
CPPSIS5032	Capture new spatial data
CPPSIS5035	Obtain and validate existing spatial data

<i>Unit code</i>	<i>Unit title</i>
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
MSL925004*	Analyse data and report results
MSL954004**	Obtain representative samples in accordance with sampling plan
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
RIICRC404E	Inspect and report on pavement condition
RIILAT402E	Provide leadership in the supervision of diverse work teams
RIIMPO402D	Apply the principles of earthworks construction

**Note the following prerequisite unit requirements:*

UNIT IN THIS QUALIFICATION	PREREQUISITE UNIT(S)
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
MSL925004 Analyse data and report results	<ul style="list-style-type: none"> MSL924003 Process and interpret data
MSL974026 Perform tests to determine	<ul style="list-style-type: none"> MSL973022 Conduct laboratory-based acceptance tests for construction materials

UNIT IN THIS QUALIFICATION	PREREQUISITE UNIT(S)
the properties of 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

** This unit is a prerequisite to an MSL unit. Please refer to the prerequisite table above. This unit is only to be selected when the MSL unit is one of the Group D elective units chosen and in the event that the learner does not already hold this prerequisite unit or its equivalent. The selection of this unit must not compromise the AQF alignment of this qualification.

Qualification Mapping Information

Supersedes and is equivalent to RII50515 Diploma of 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>